

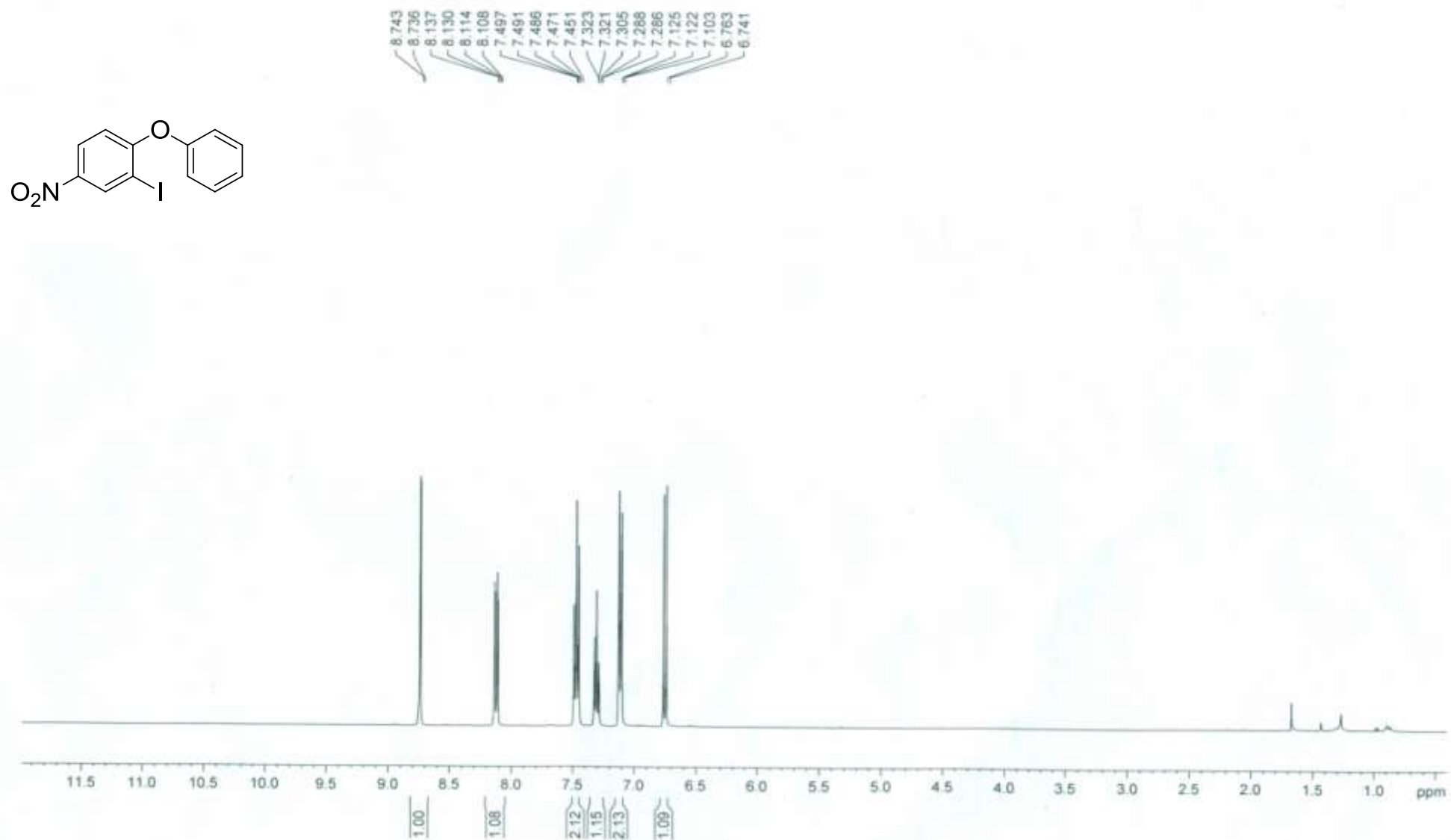
Synthesis of Dibenzofurans *via* C-H Activation of *o*-Iodo Diarylethers

Niranjan Panda,* Irshad Mattan, and Dinesh Kumar Nayak

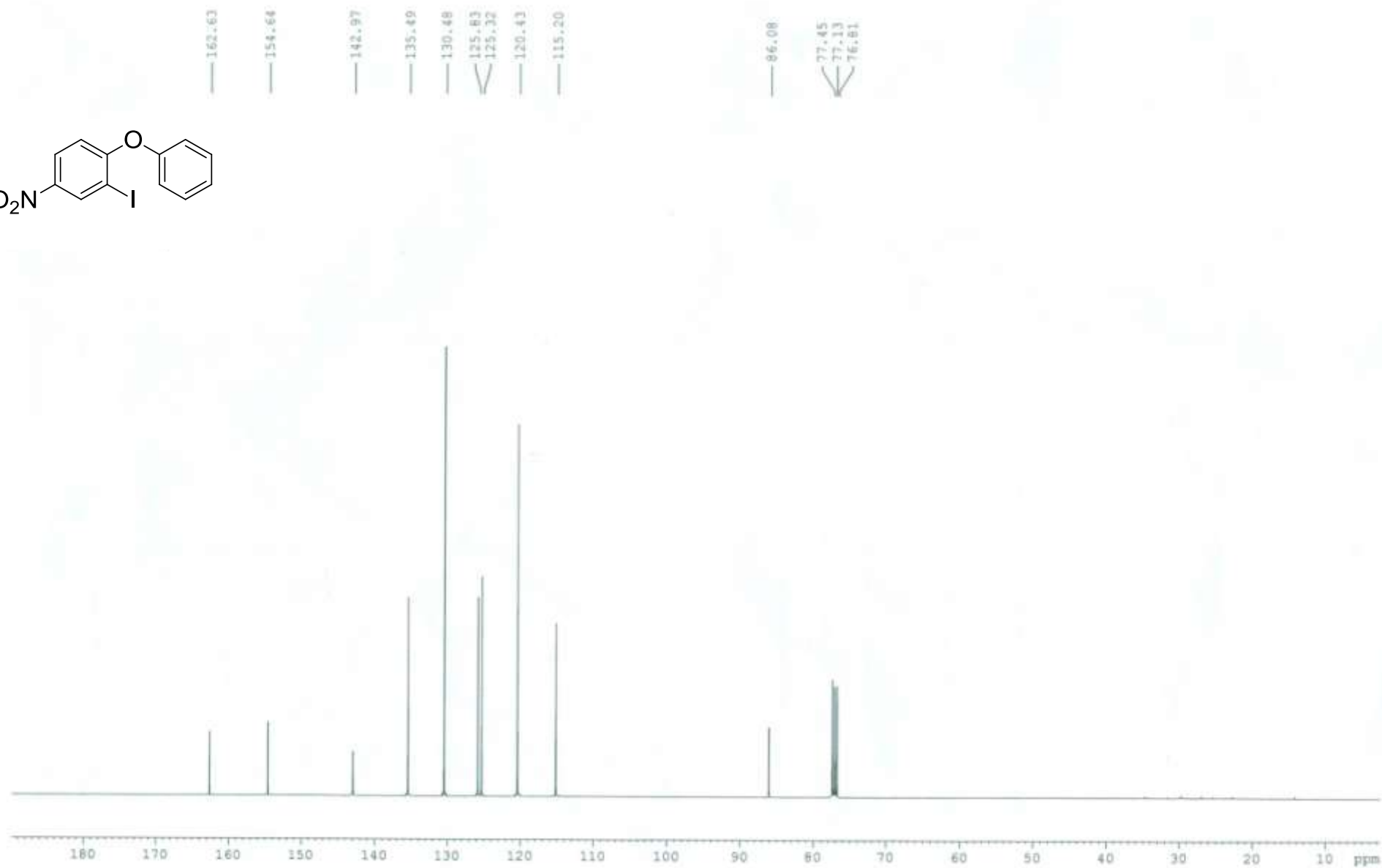
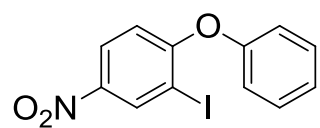
Department of Chemistry, National Institute of Technology Rourkela, Odisha-769008, India,
Fax: +91 661 2462651, Tel: +91 661 2462653; Email: npanda@nitrkl.ac.in

Copies of ^1H NMR and ^{13}C NMR Spectra of compounds

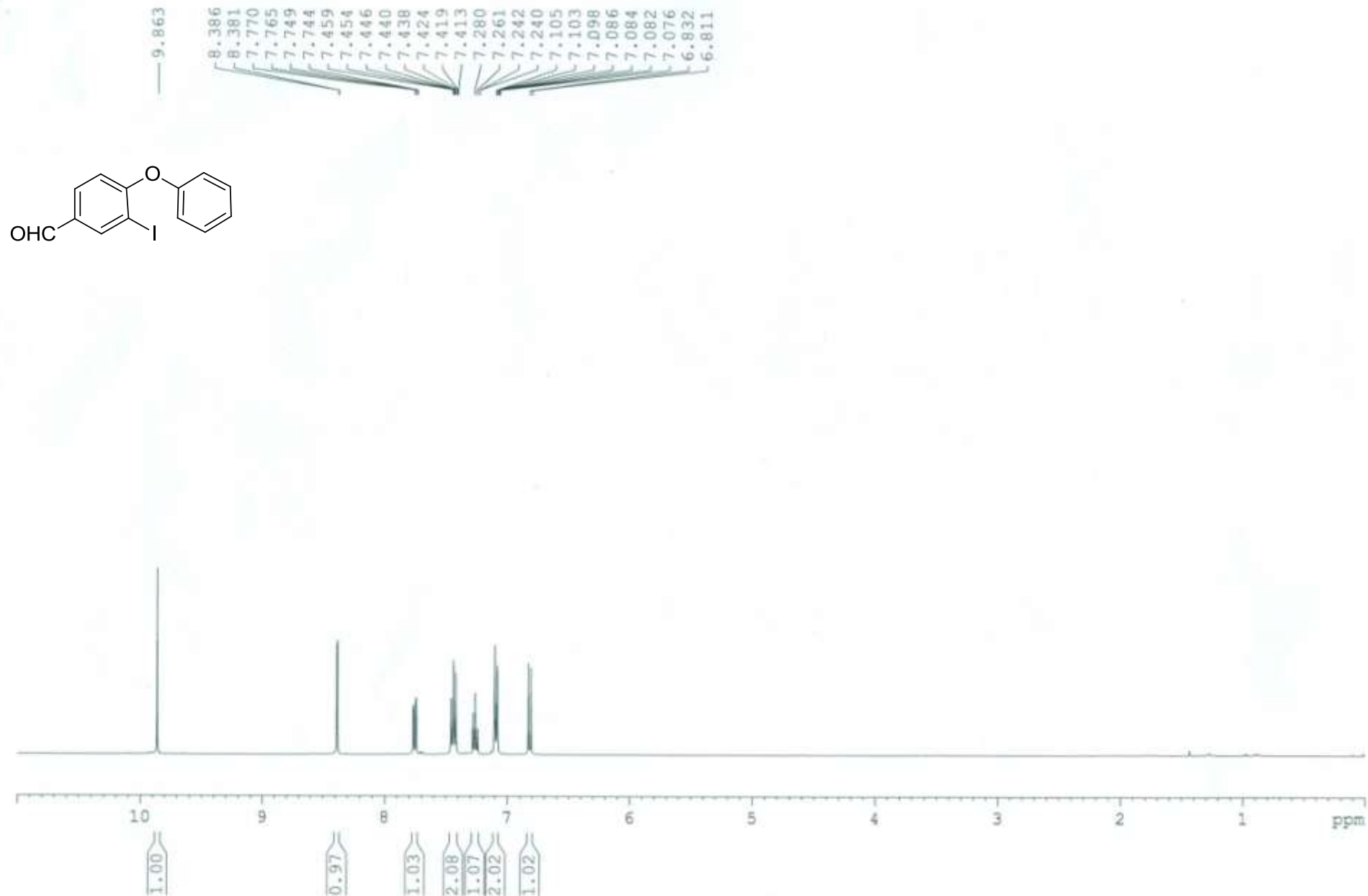
2-Iodo-4-nitro-1-phenoxy-benzene (3a) – ^1H NMR



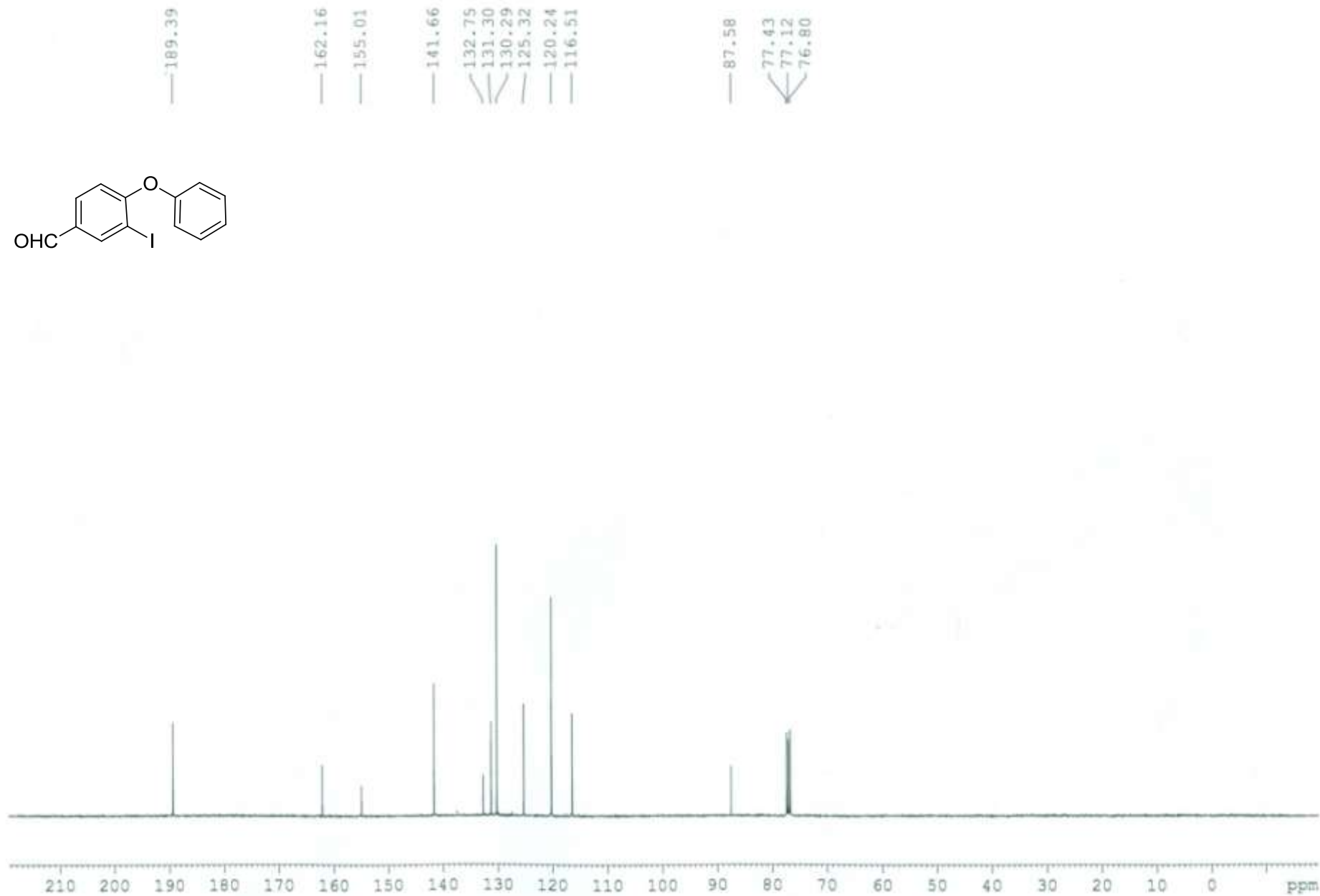
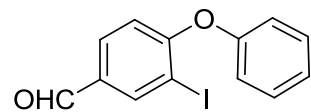
2-Iodo-4-nitro-1-phenoxy-benzene (3a) – ^{13}C NMR



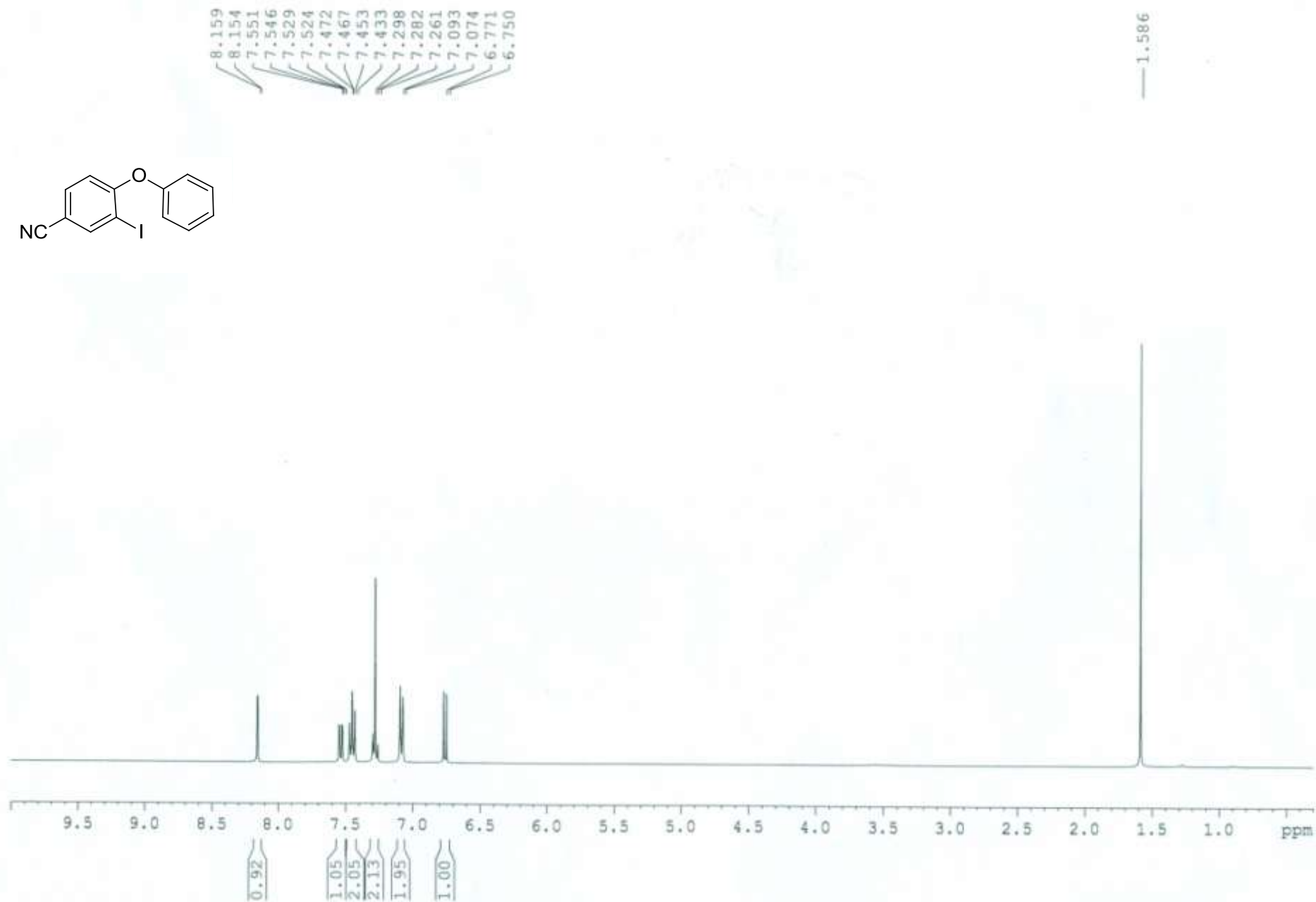
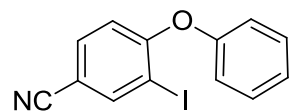
3-Iodo-4-phenoxy-benzaldehyde (3b) – ^1H NMR



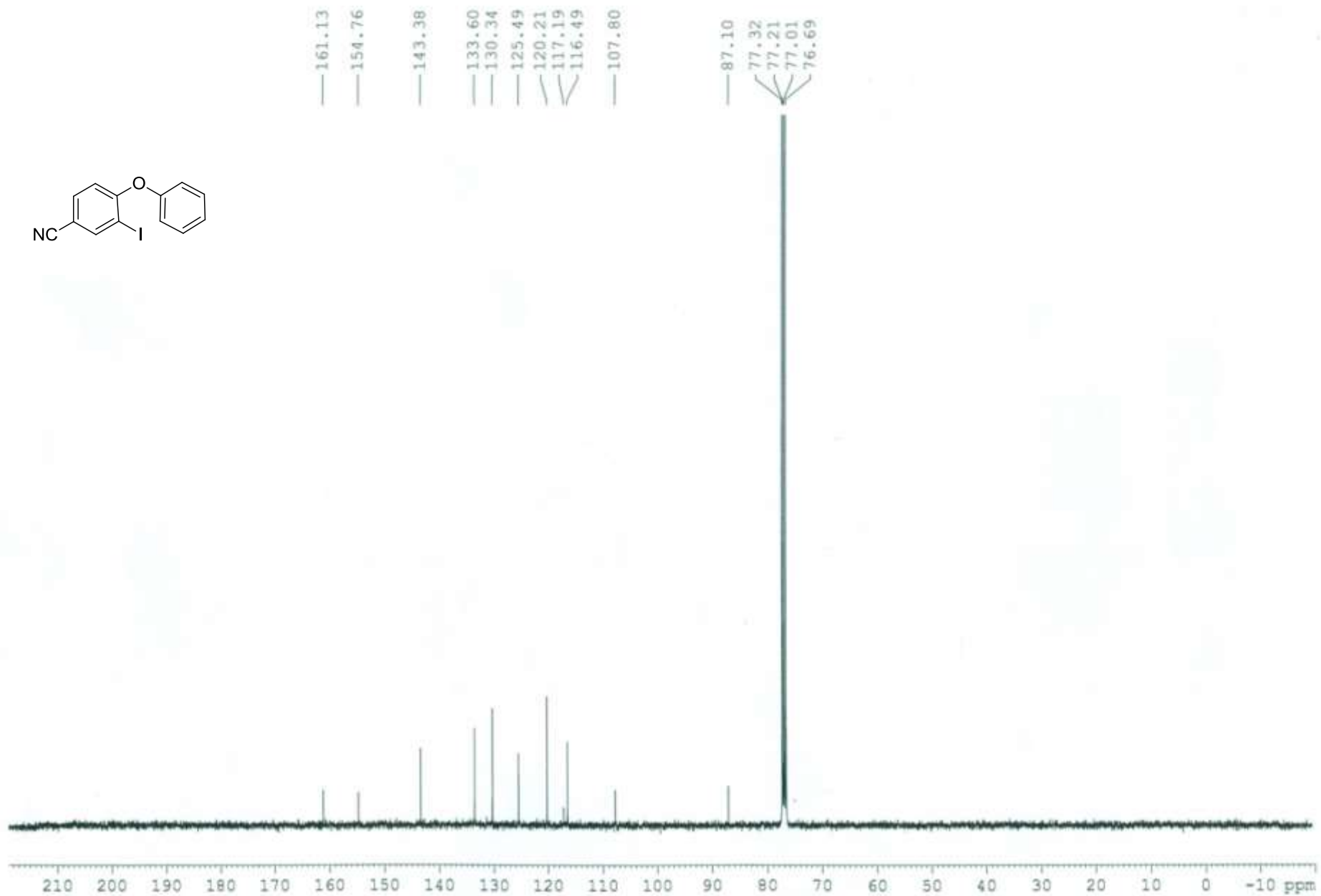
3-Iodo-4-phenoxy-benzaldehyde (3b) – ^{13}C NMR



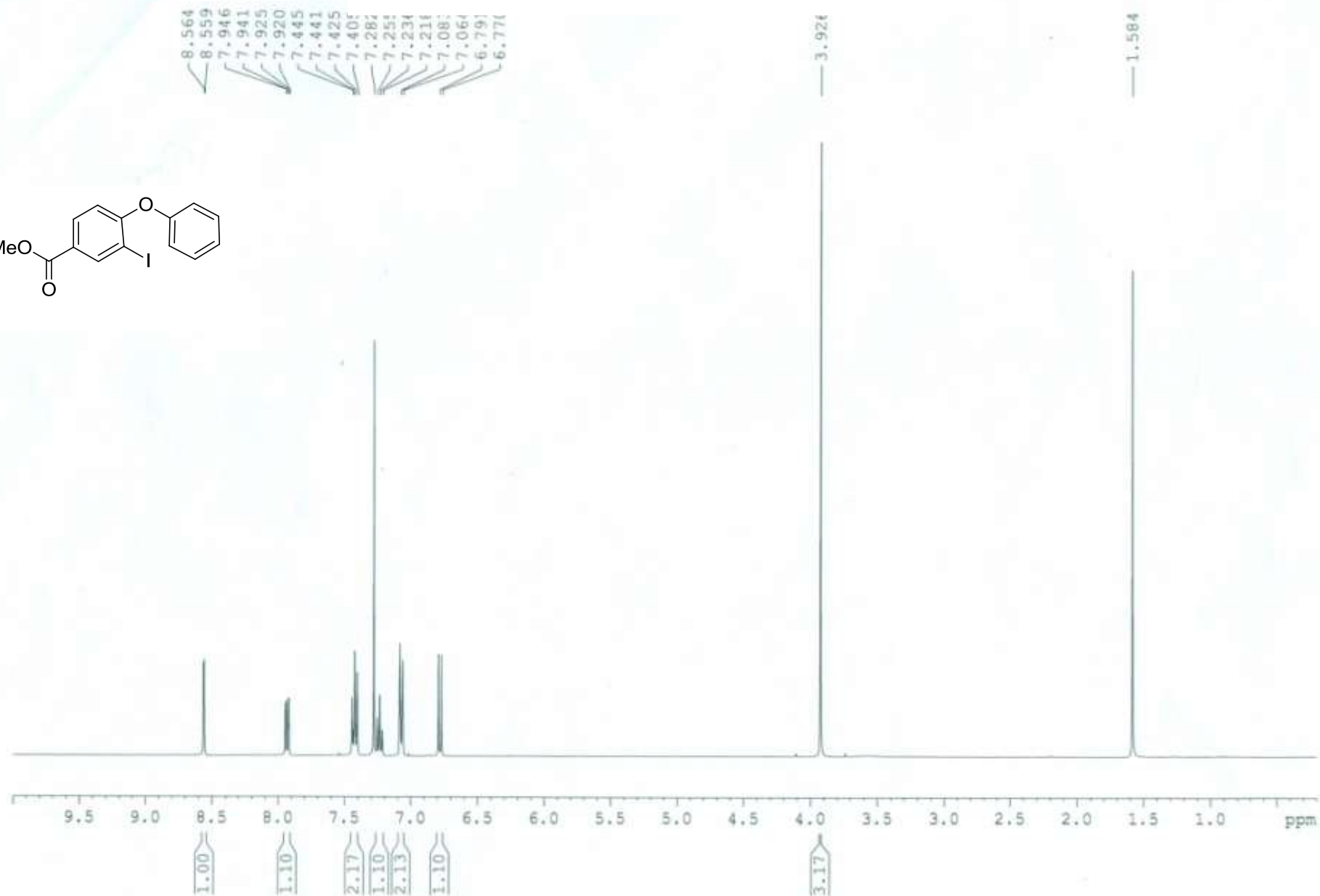
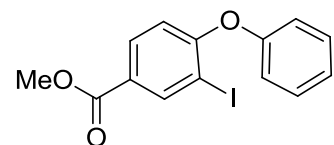
3-Iodo-4-phenoxy-benzonitrile (3c) – ^1H NMR



3-Iodo-4-phenoxy-benzonitrile (3c) – ^{13}C NMR

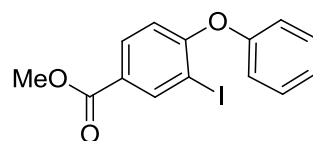


3-Iodo-4-phenoxy-benzoic acid methyl ester (3d) – ^1H NMR



3-Iodo-4-phenoxy-benzoic acid methyl ester (3d) – ^{13}C NMR

24.11.2014



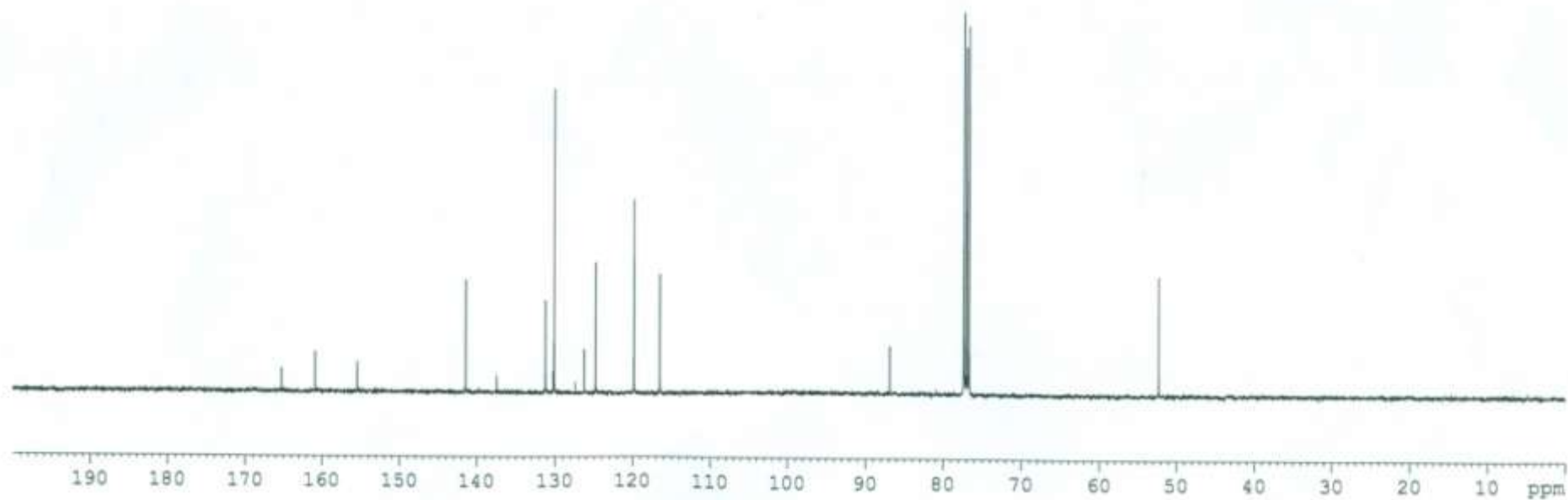
— 165.28
— 160.90
— 155.46

— 141.46
— 137.47
131.23
130.24
130.13
126.29
124.82
119.85
— 116.51

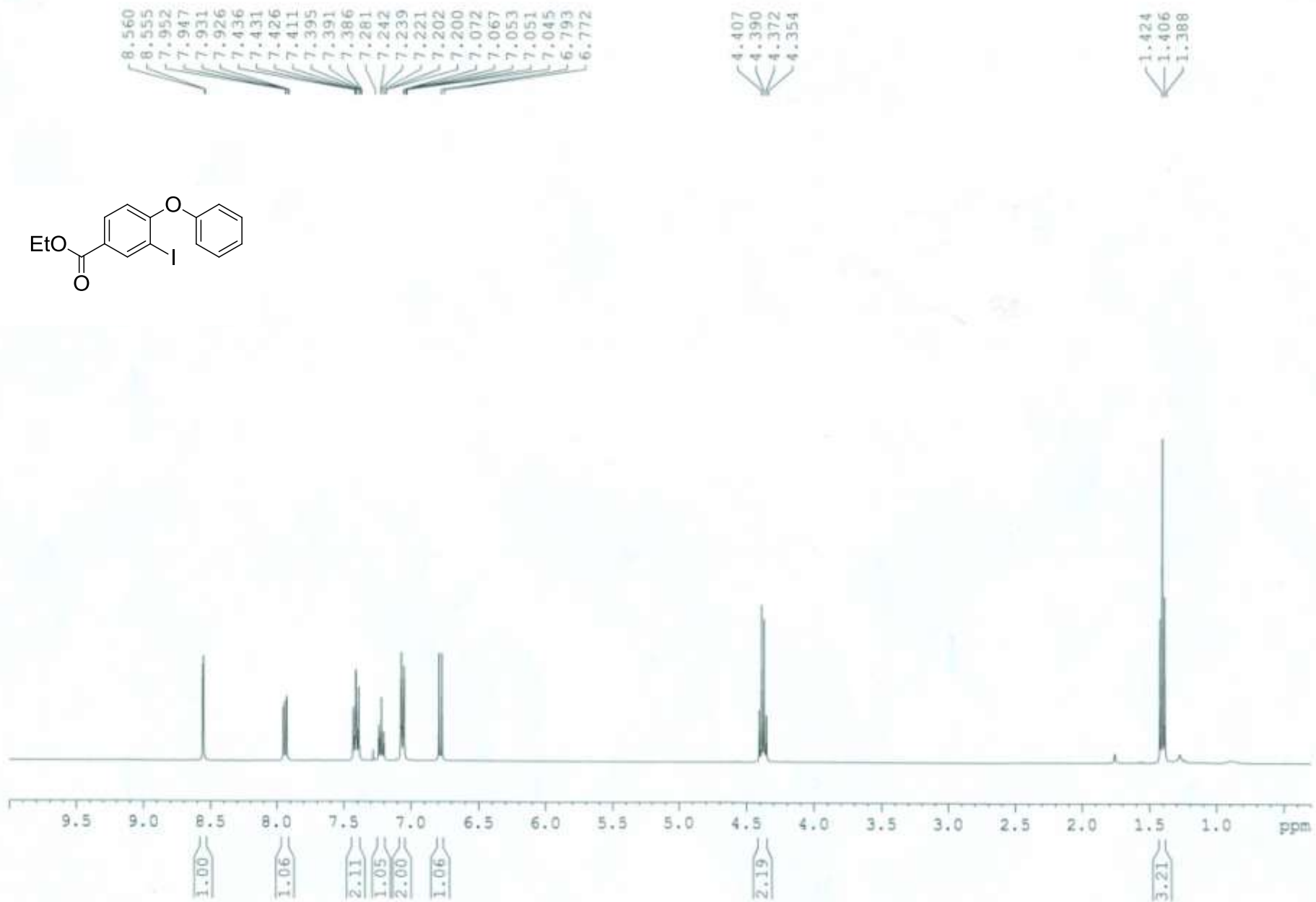
— 86.92

77.35
77.03
76.71

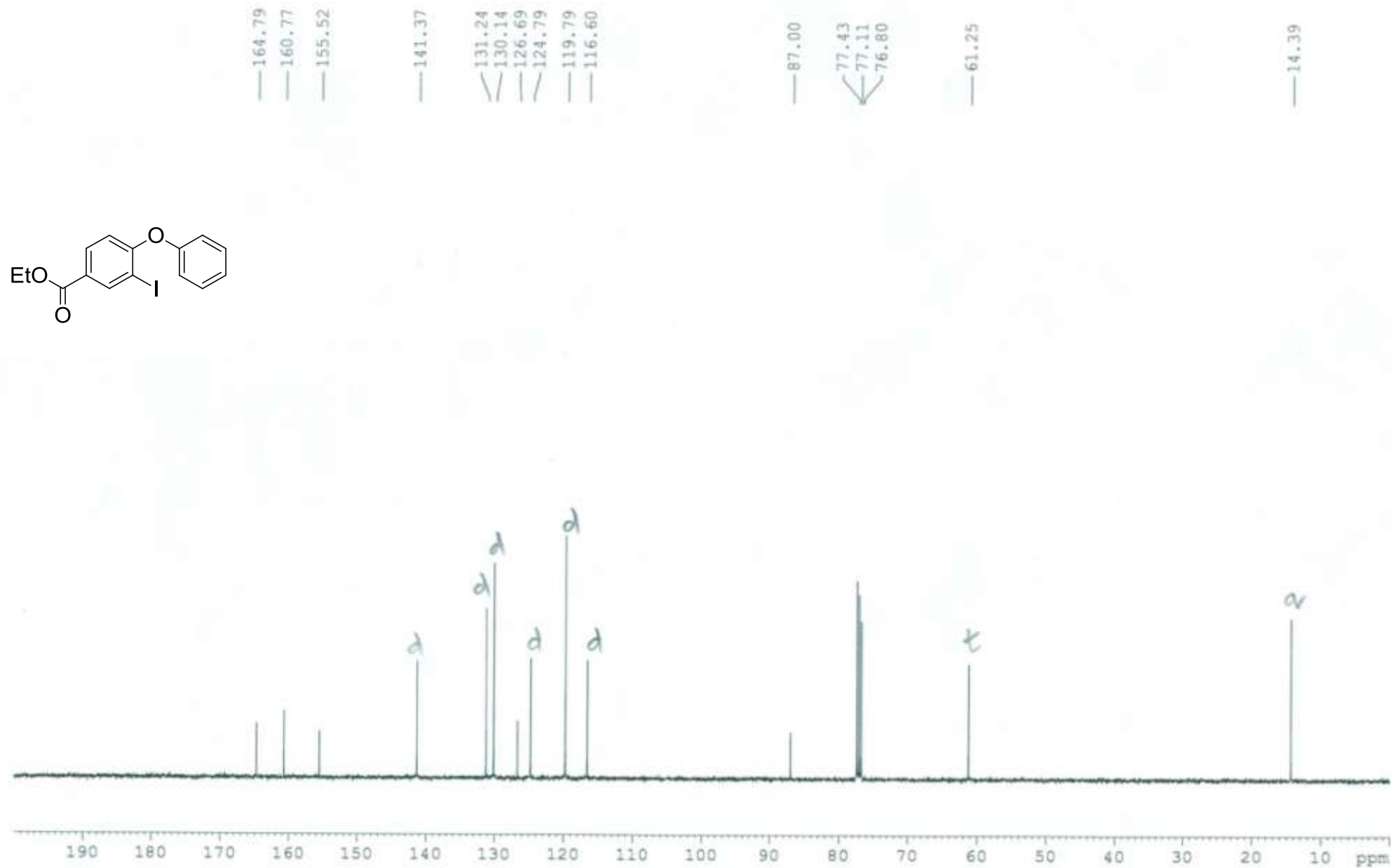
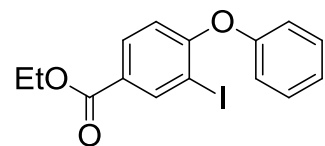
— 52.29



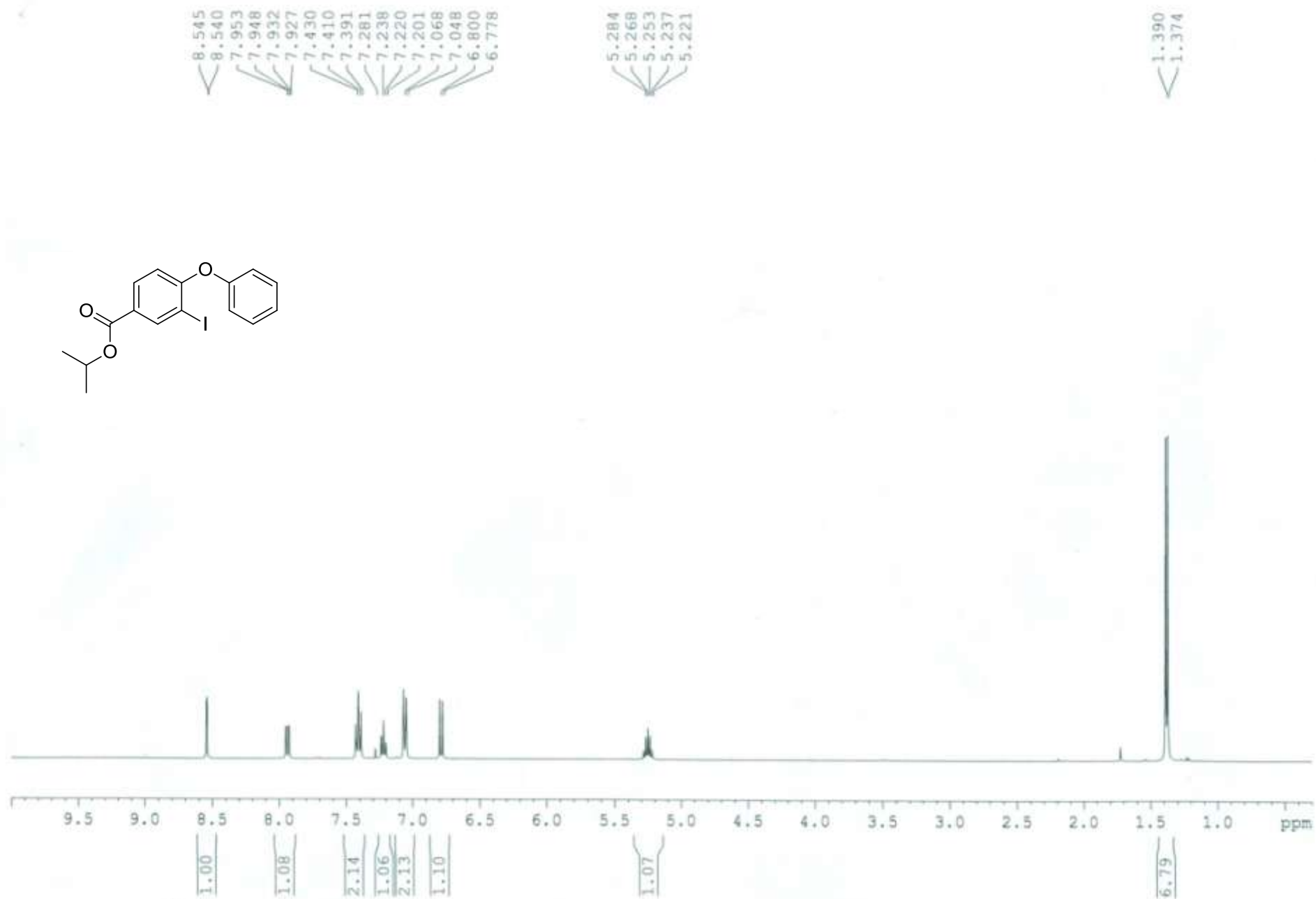
3-Iodo-4-phenoxy-benzoic acid ethyl ester (3e) – ^1H NMR



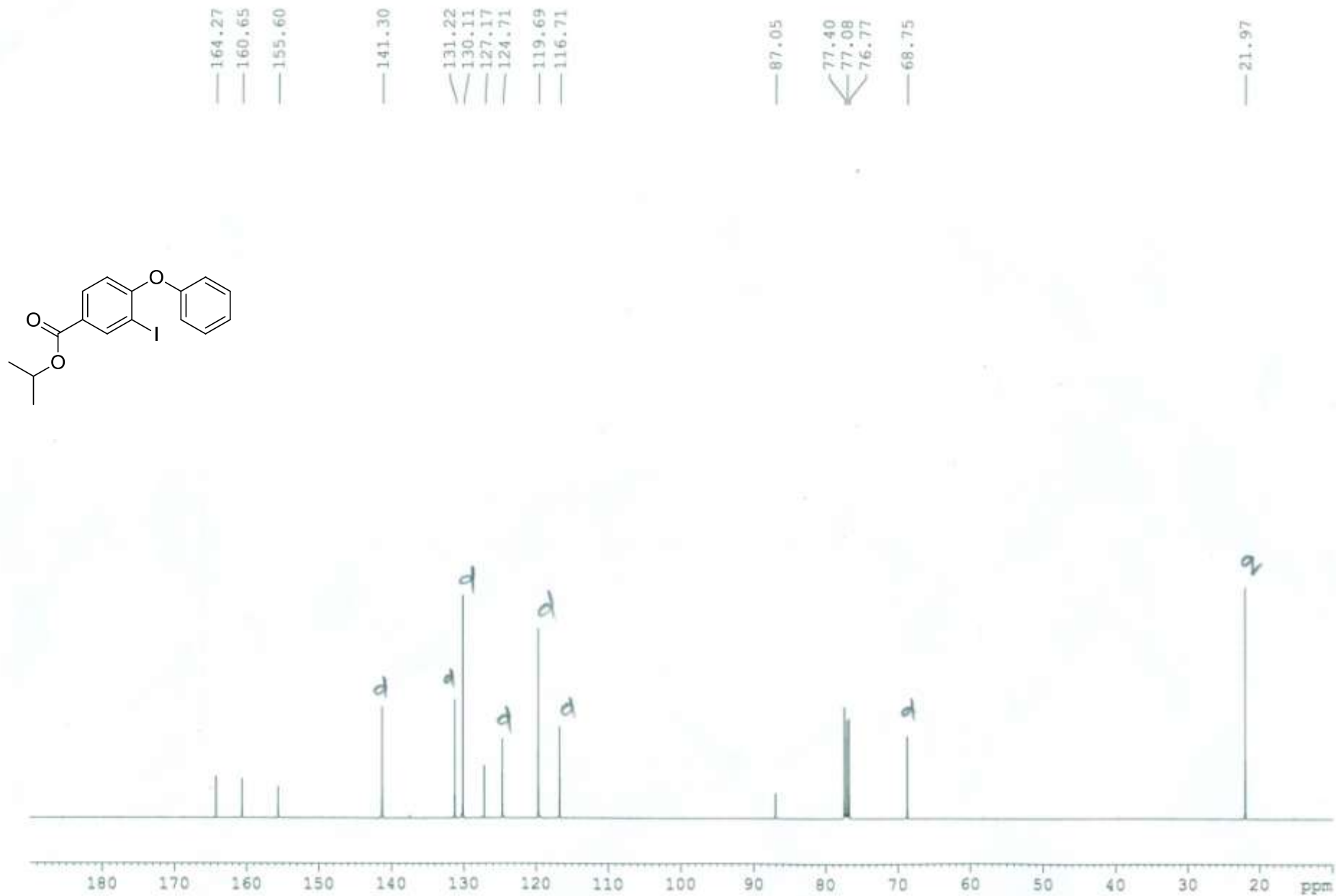
3-Iodo-4-phenoxy-benzoic acid ethyl ester (3e) – ^{13}C NMR



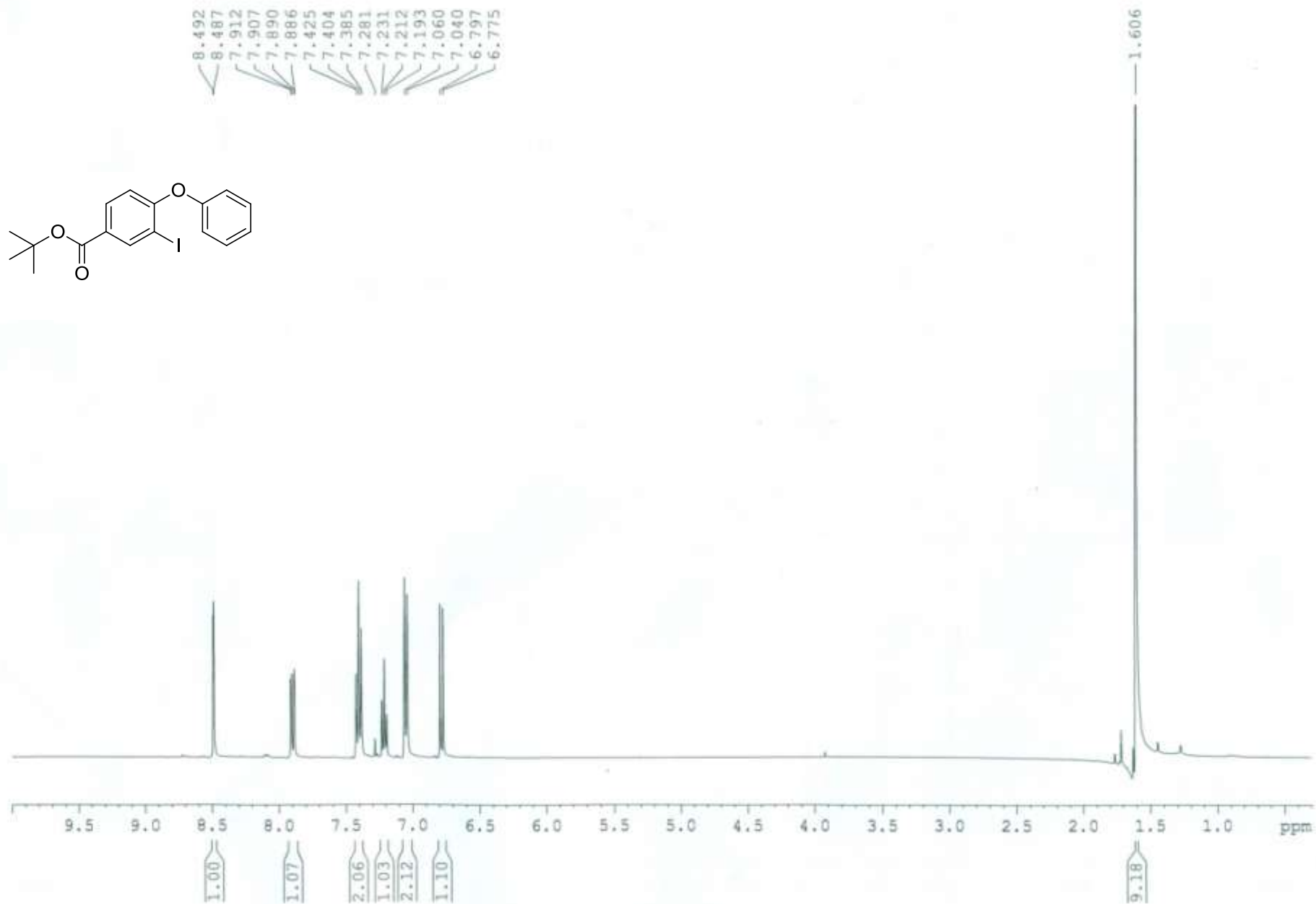
Isopropyl 3-iodo-4-phenoxybenzoate (3f) – ^1H NMR



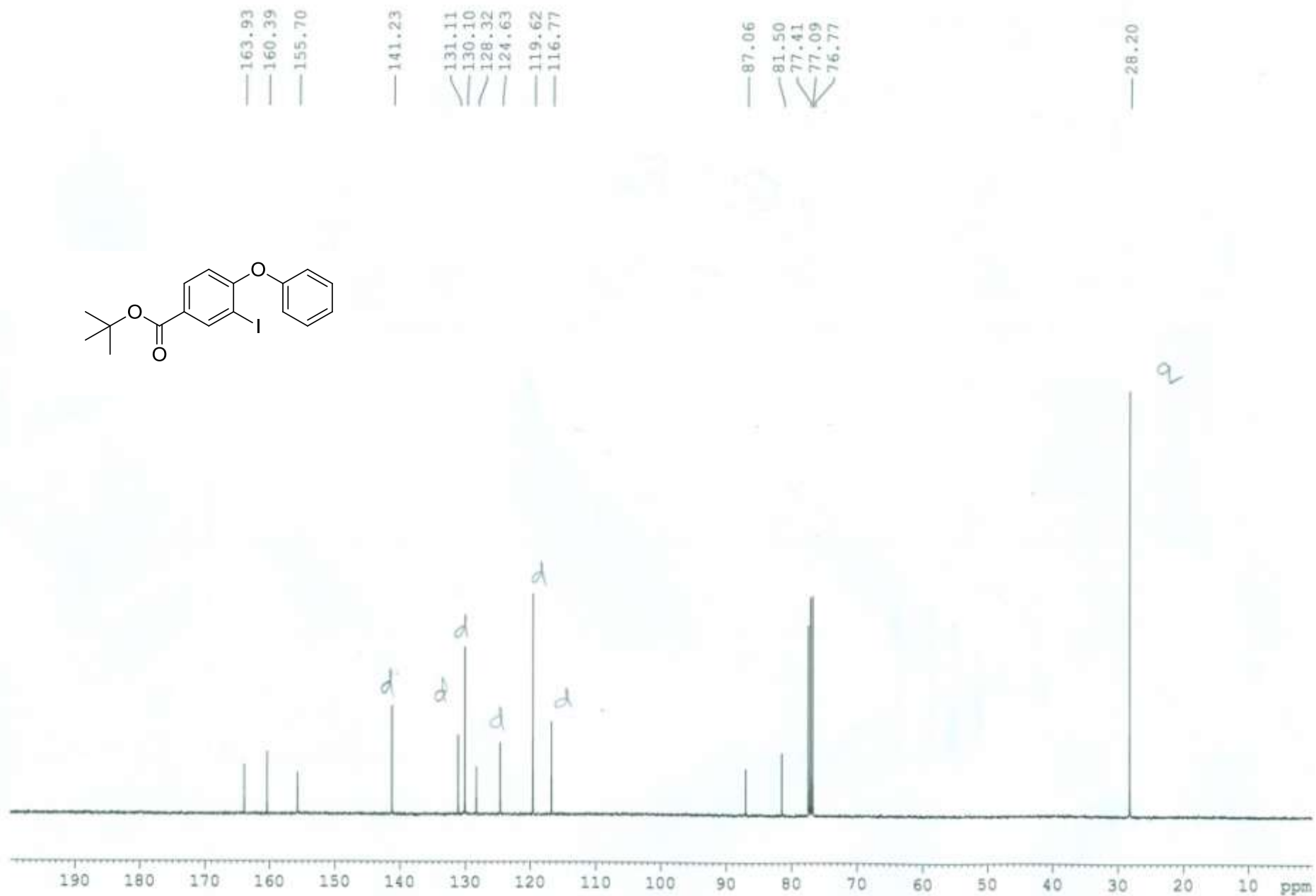
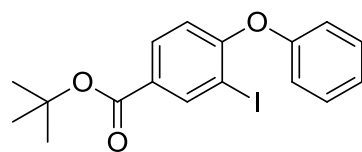
Isopropyl 3-iodo-4-phenoxybenzoate (3f) – ^{13}C NMR



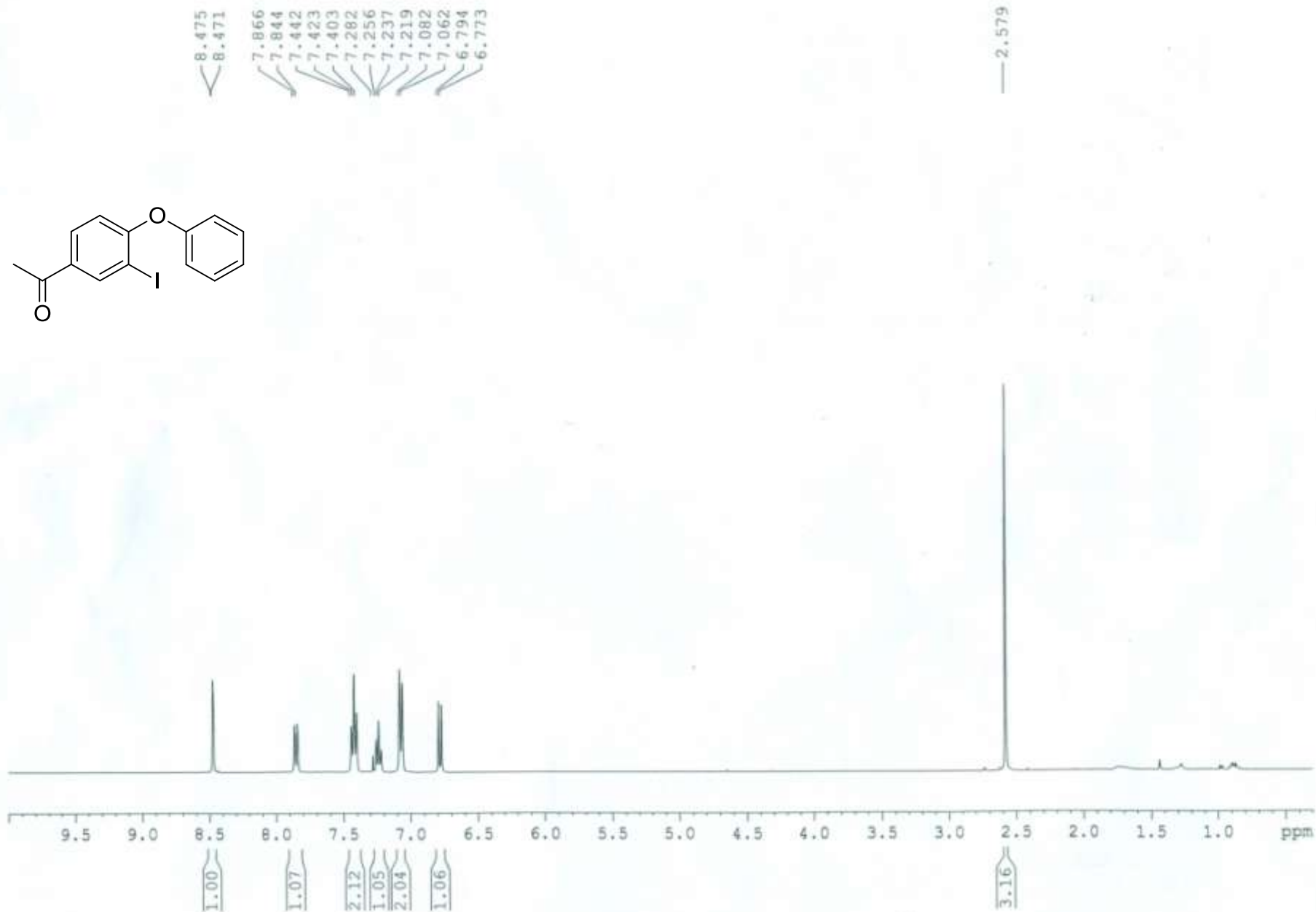
Tert-butyl 3-iodo-4-phenoxybenzoate (3g) – ^1H NMR



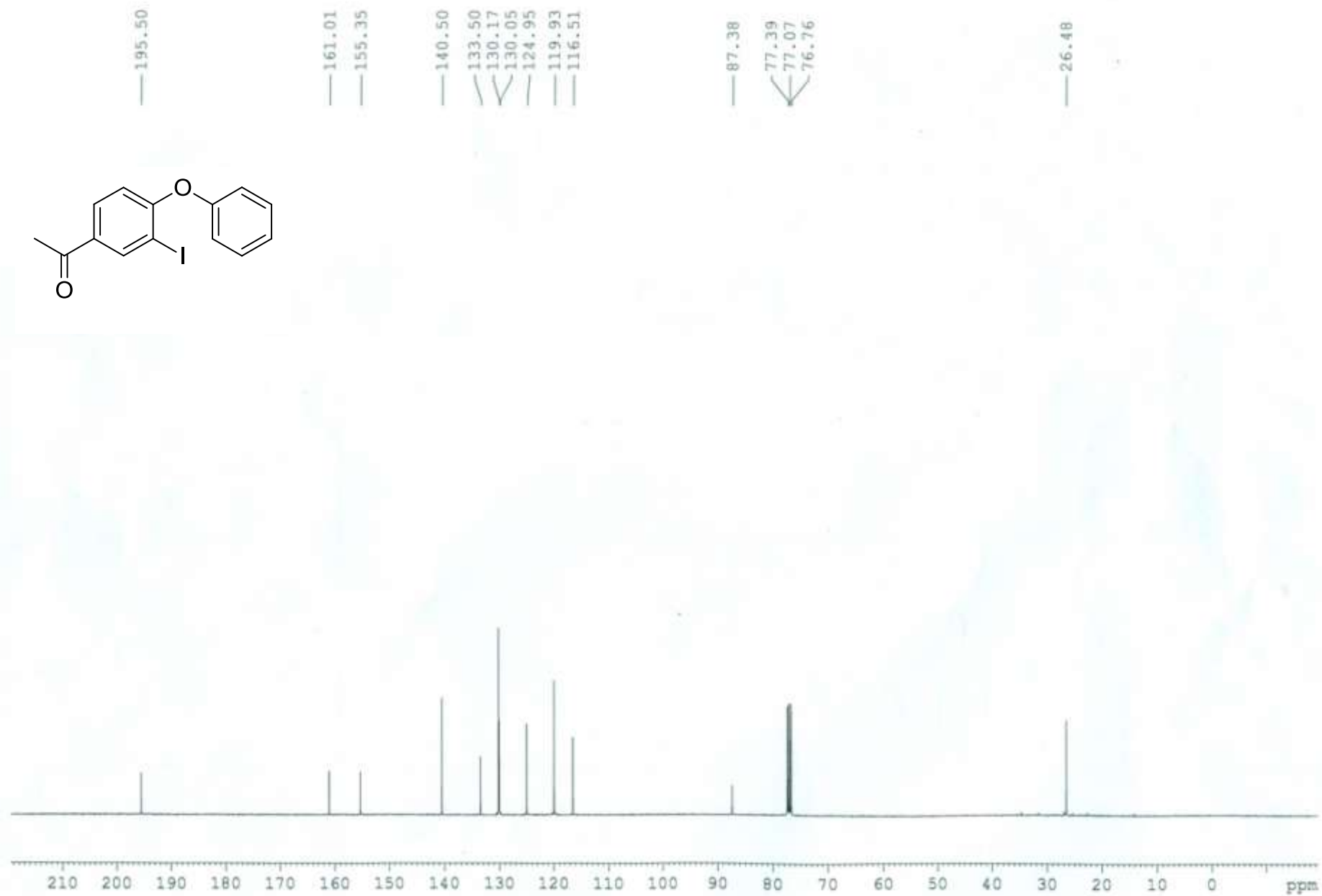
Tert-butyl 3-iodo-4-phenoxybenzoate (3g) – ^{13}C NMR



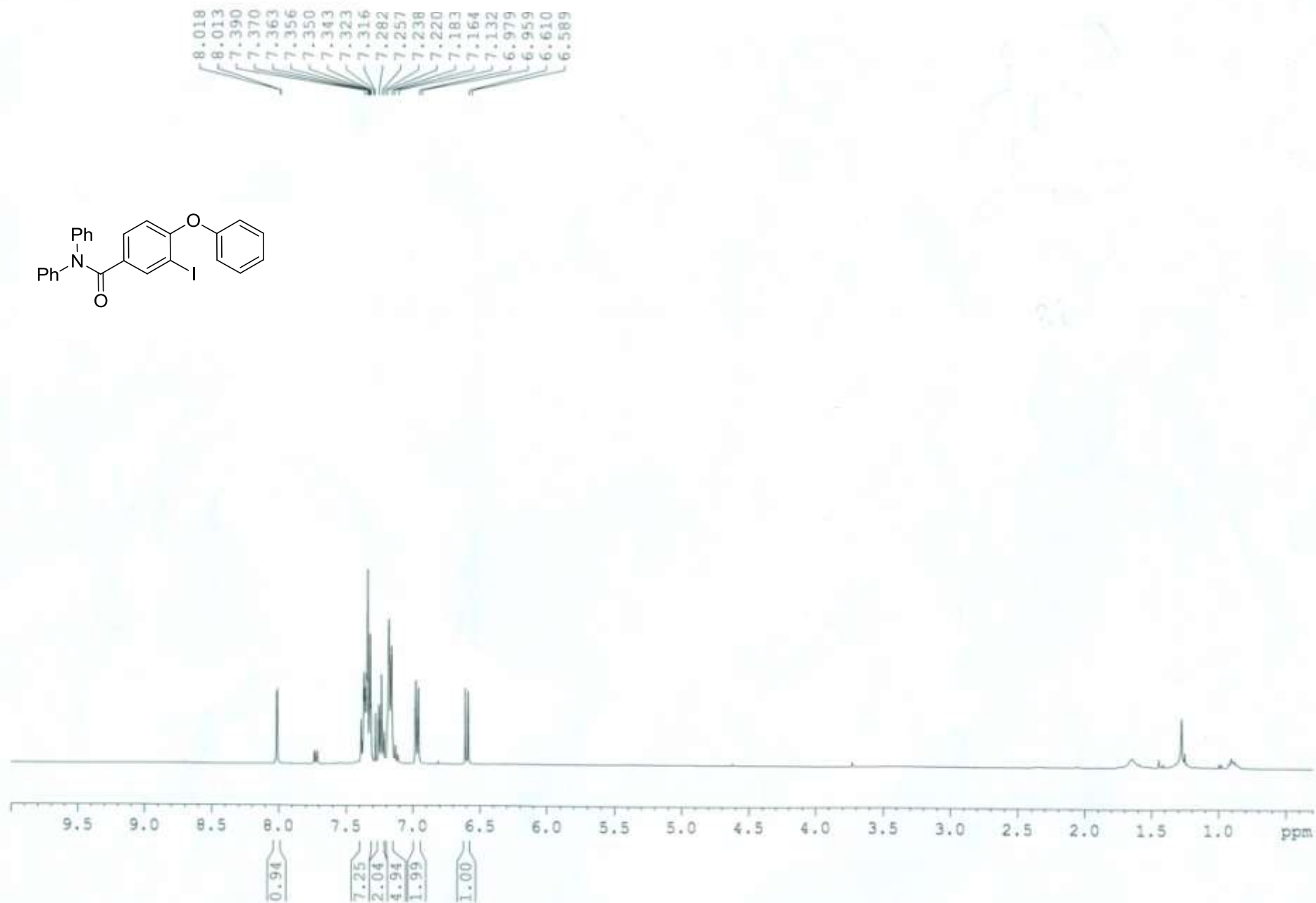
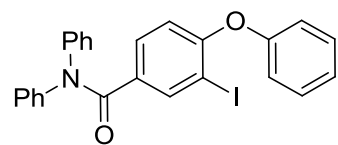
1-(3-Iodo-4-phenoxy-phenyl)-ethanone (3h) – ^1H NMR



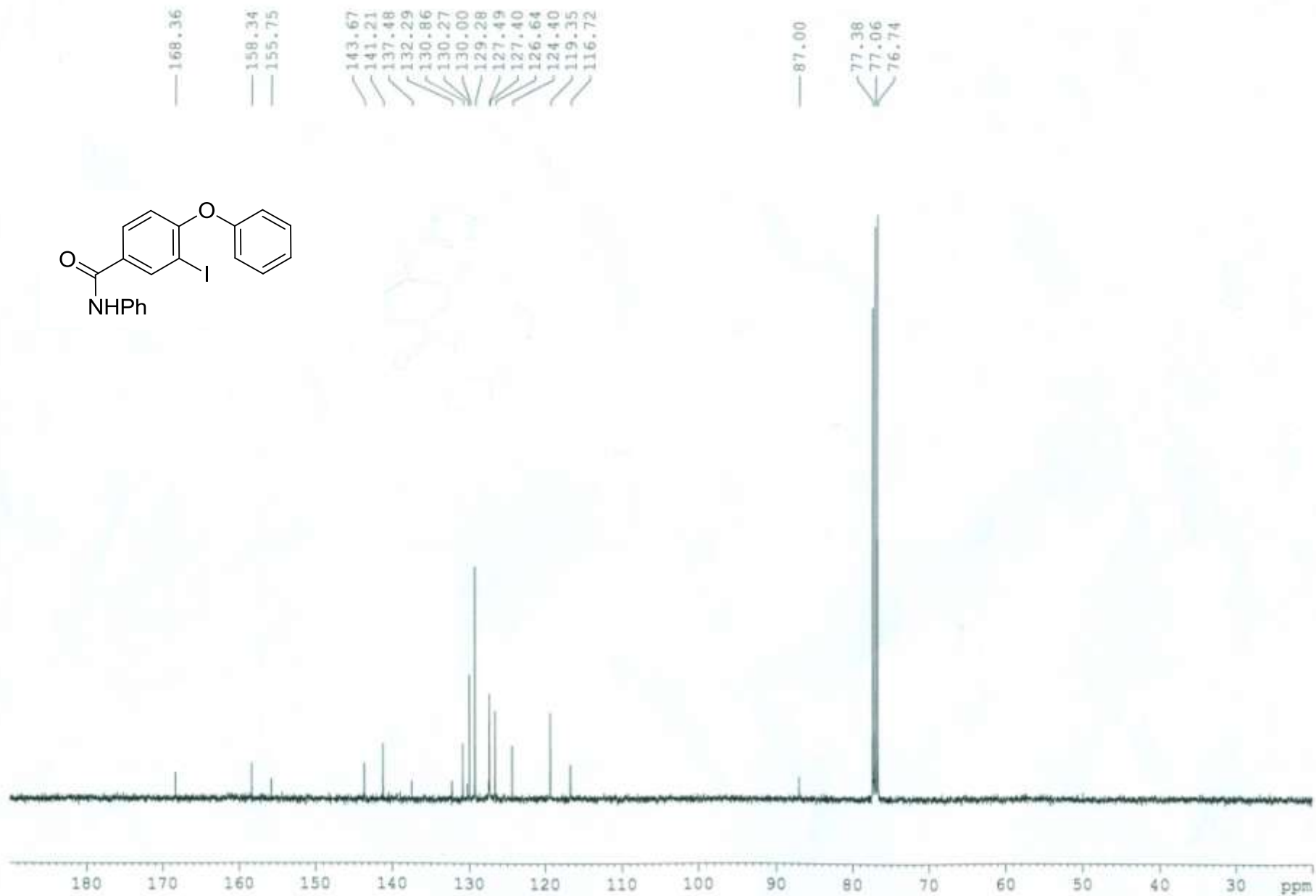
1-(3-Iodo-4-phenoxy-phenyl)-ethanone (3h) – ^{13}C NMR



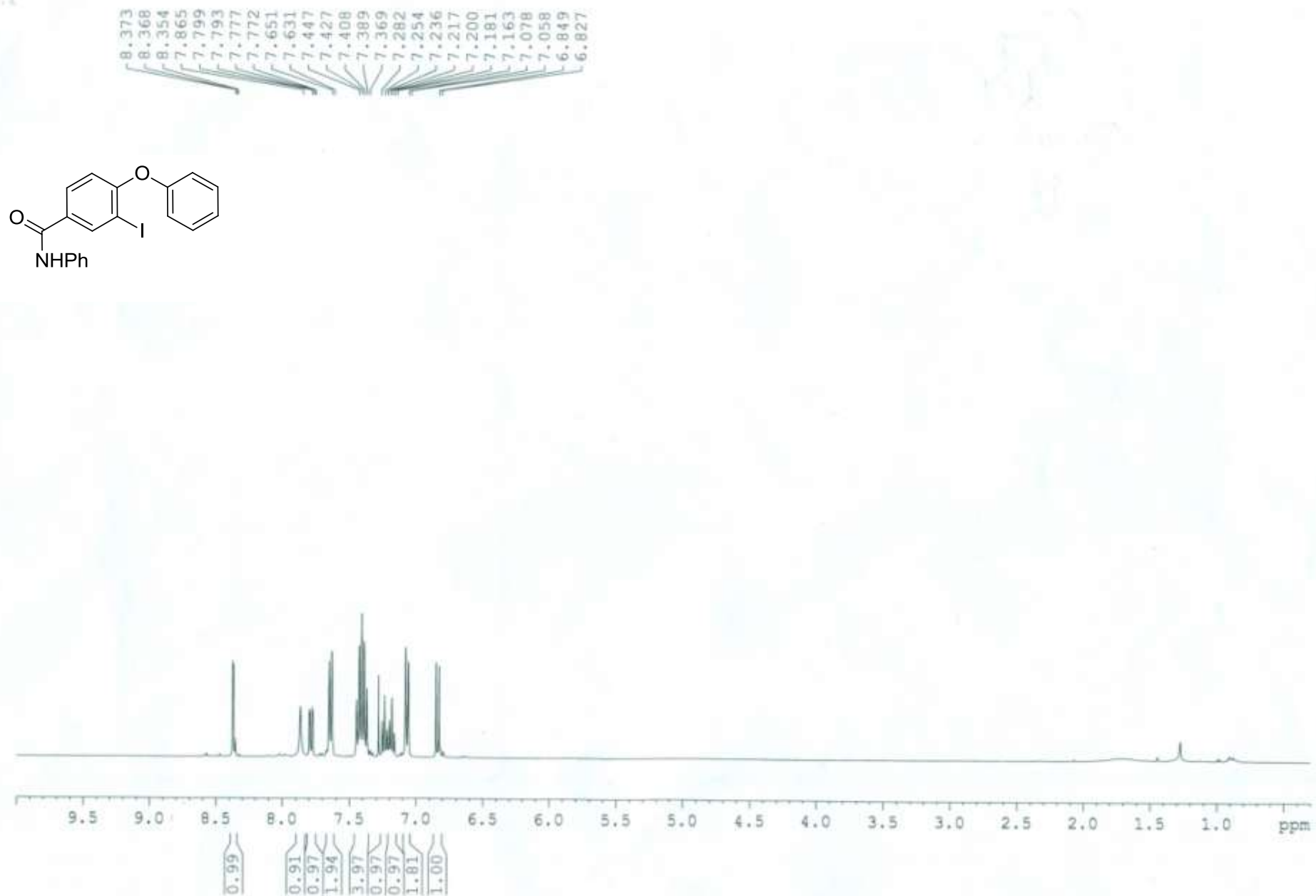
3-Iodo-4-phenoxy-*N,N*-diphenylbenzamide (3i) – ^1H NMR



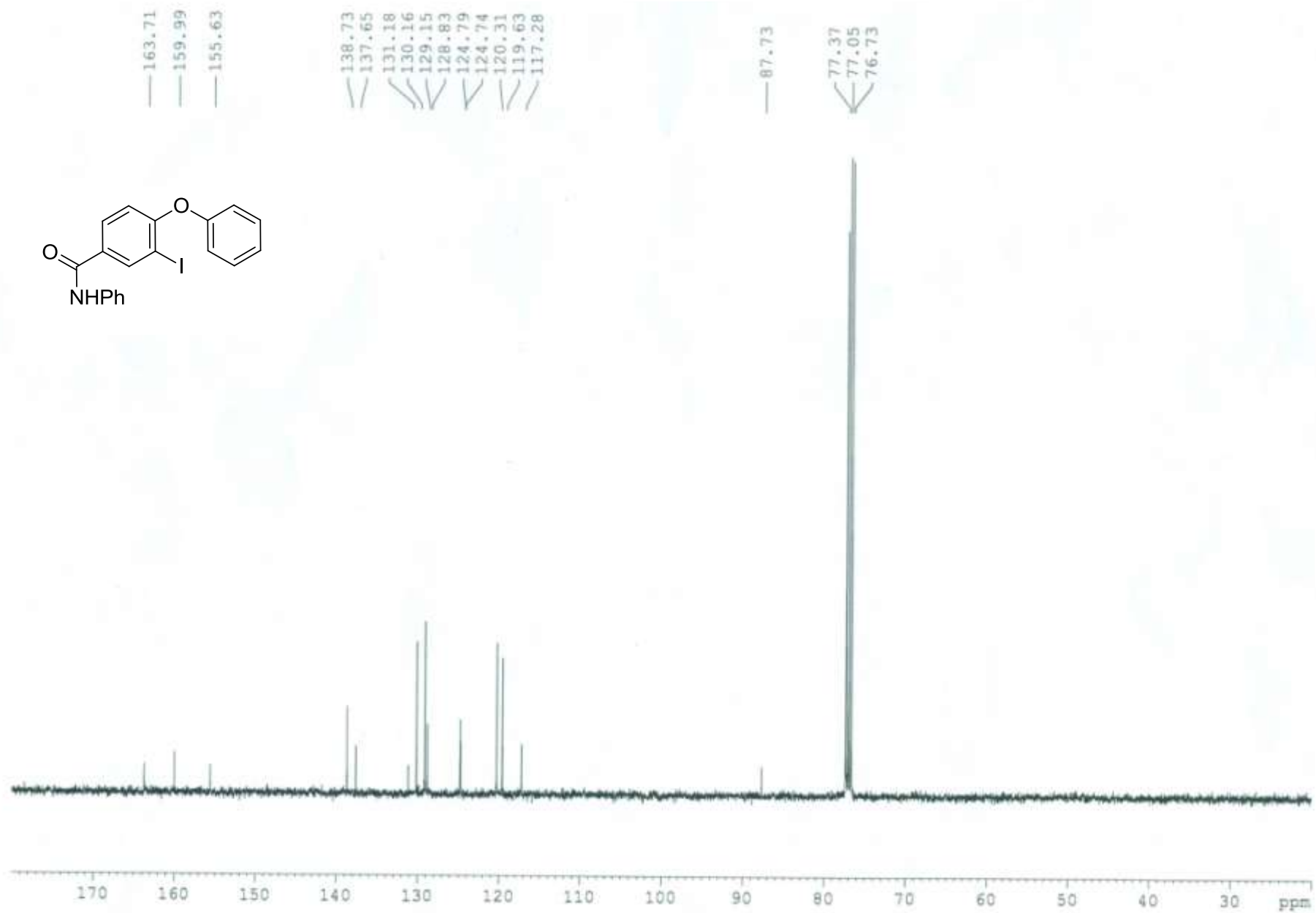
3-Iodo-4-phenoxy-*N,N*-diphenylbenzamide (3i) – ^{13}C NMR



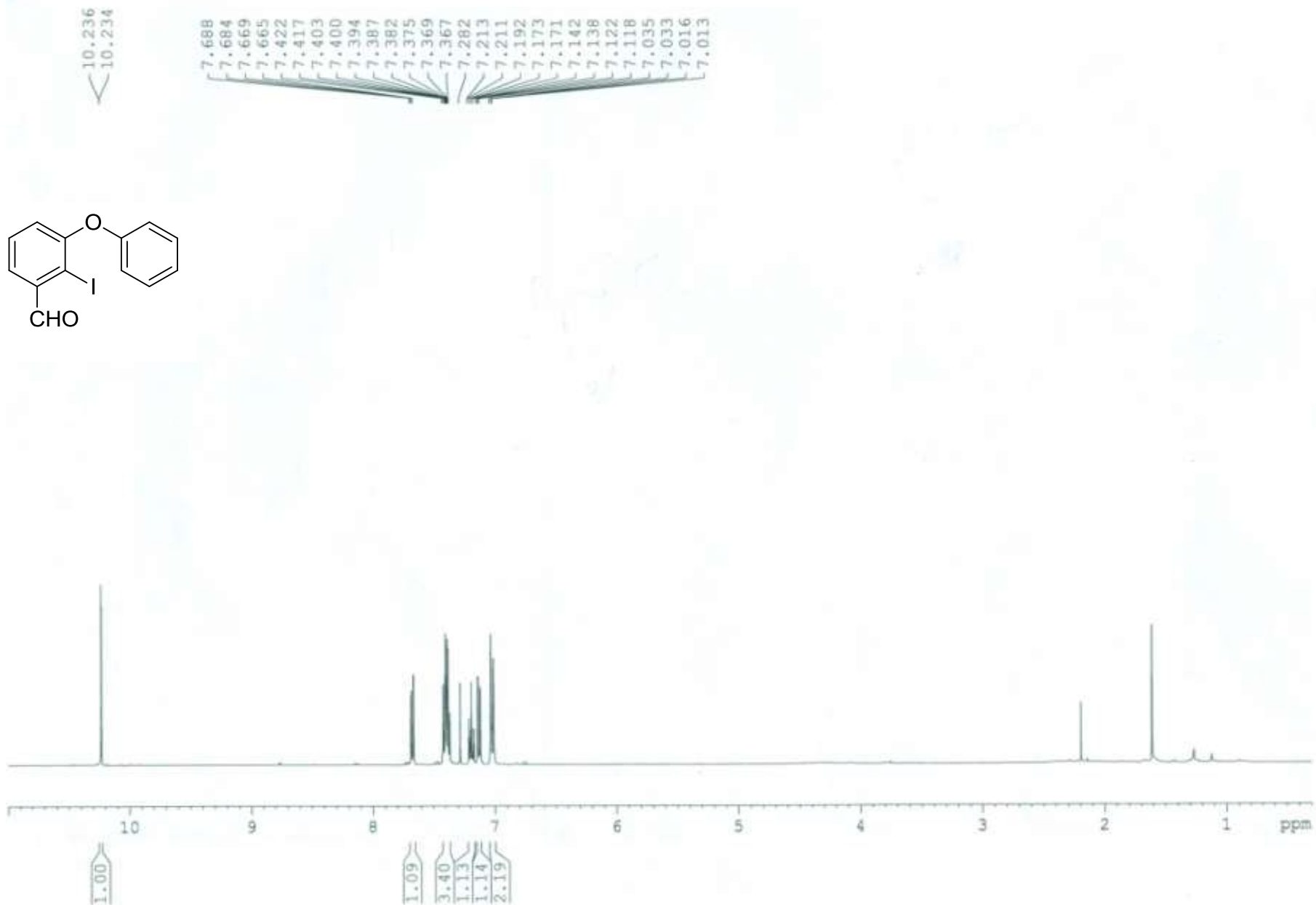
3-Iodo-4-phenoxy-*N*-phenyl-benzamide (3j) – ^1H NMR



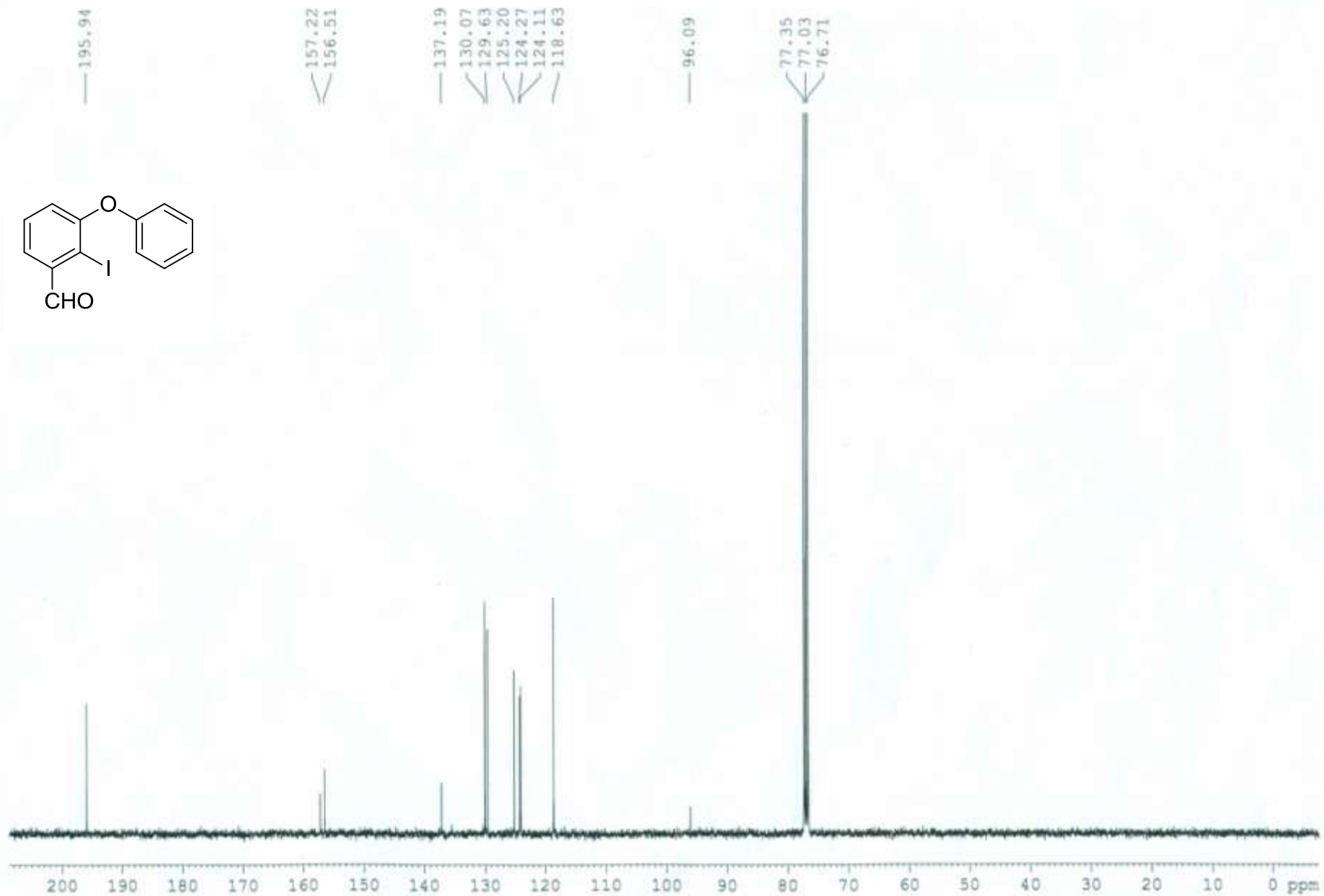
3-Iodo-4-phenoxy-*N*-phenyl-benzamide (3j) – ^{13}C NMR



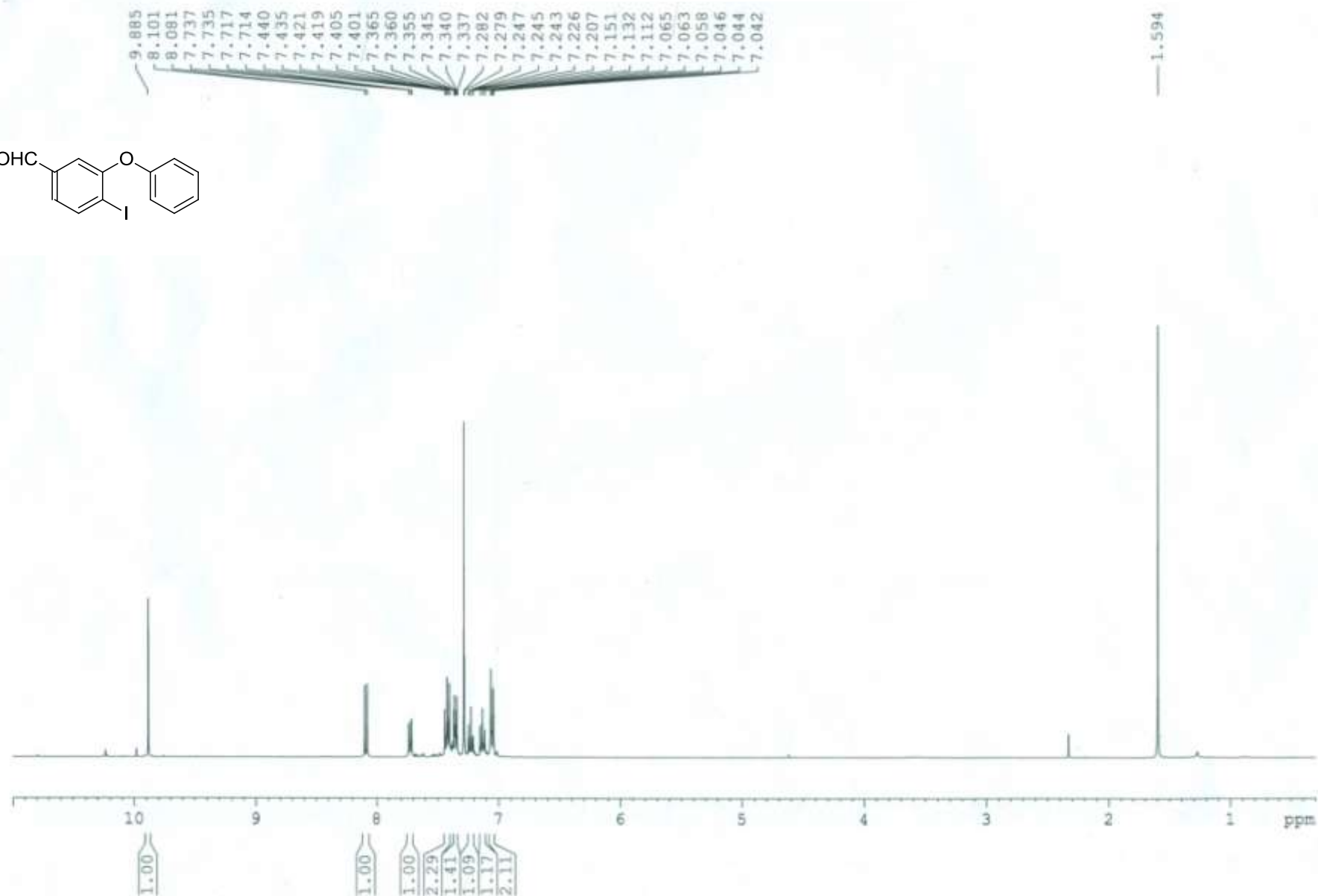
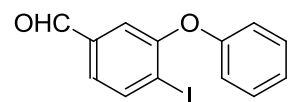
2-Iodo-3-phenoxy-benzaldehyde (3k) – ^1H NMR



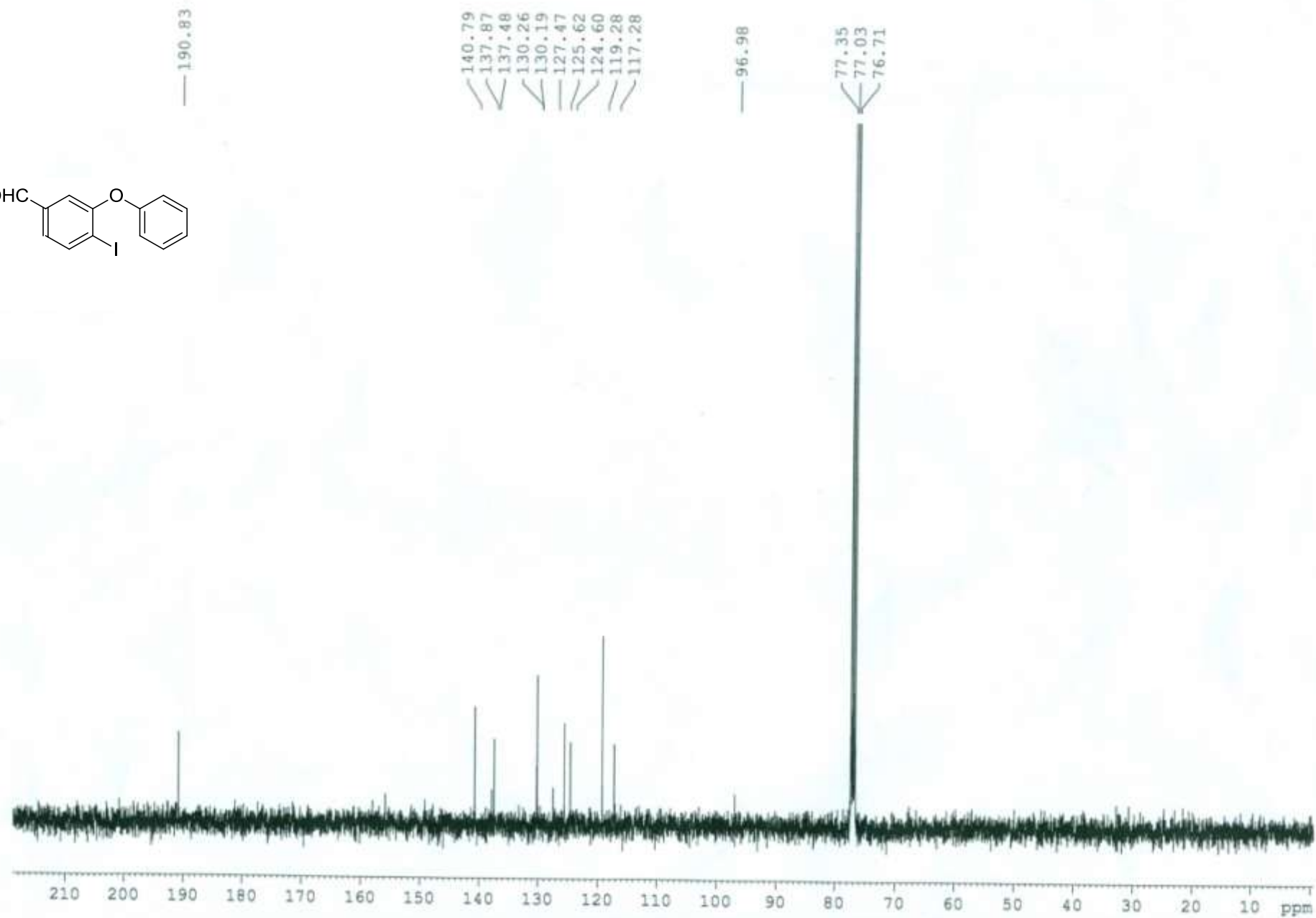
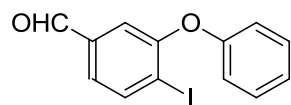
2-Iodo-3-phenoxy-benzaldehyde (3k) – ^{13}C NMR



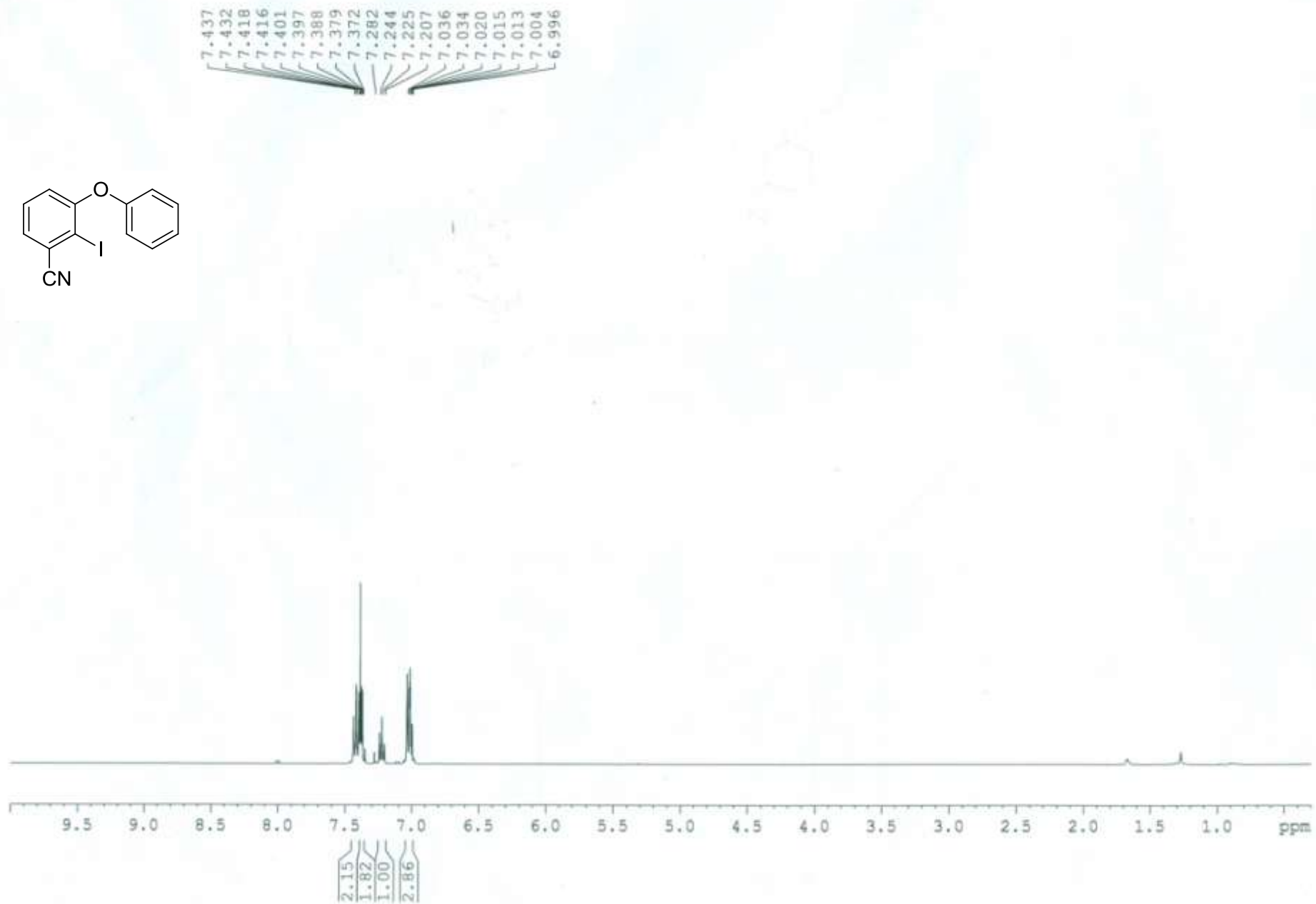
4-iodo-3-phenoxybenzaldehyde (3l) – ^1H NMR



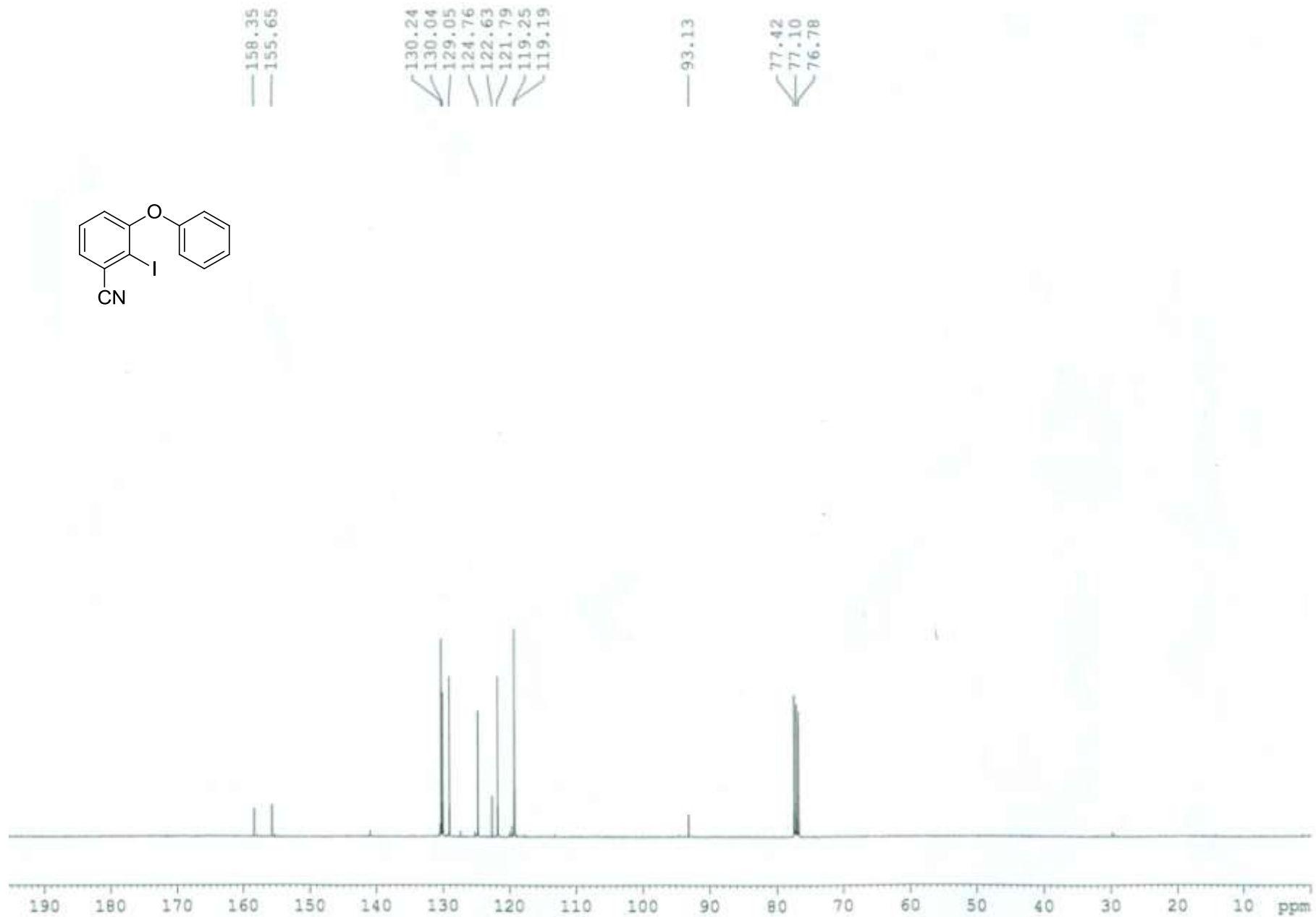
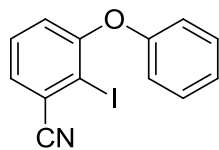
4-iodo-3-phenoxybenzaldehyde (3l) – ^{13}C NMR



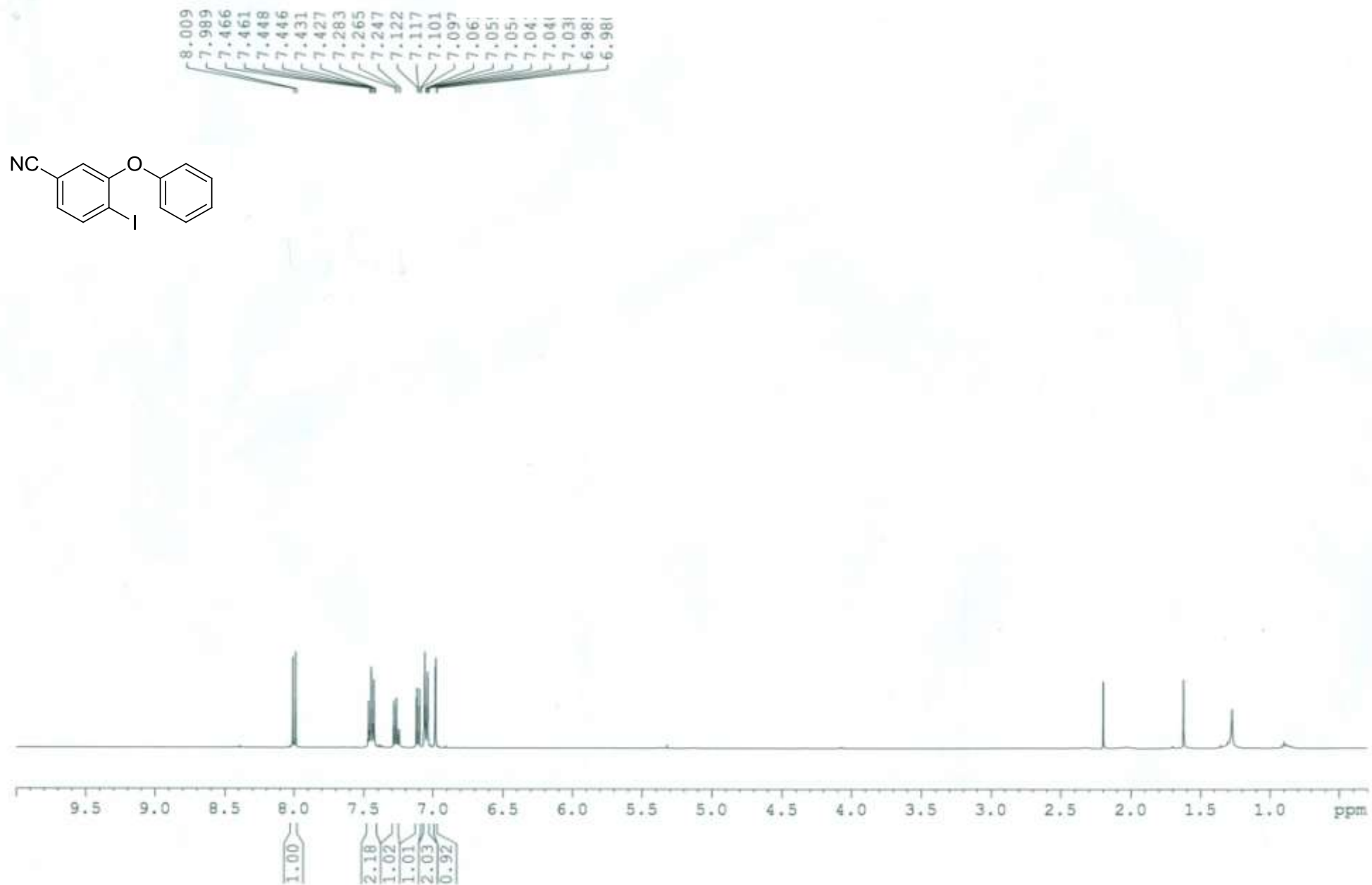
2-Iodo-3-phenoxybenzonitrile (3m) – ^1H NMR



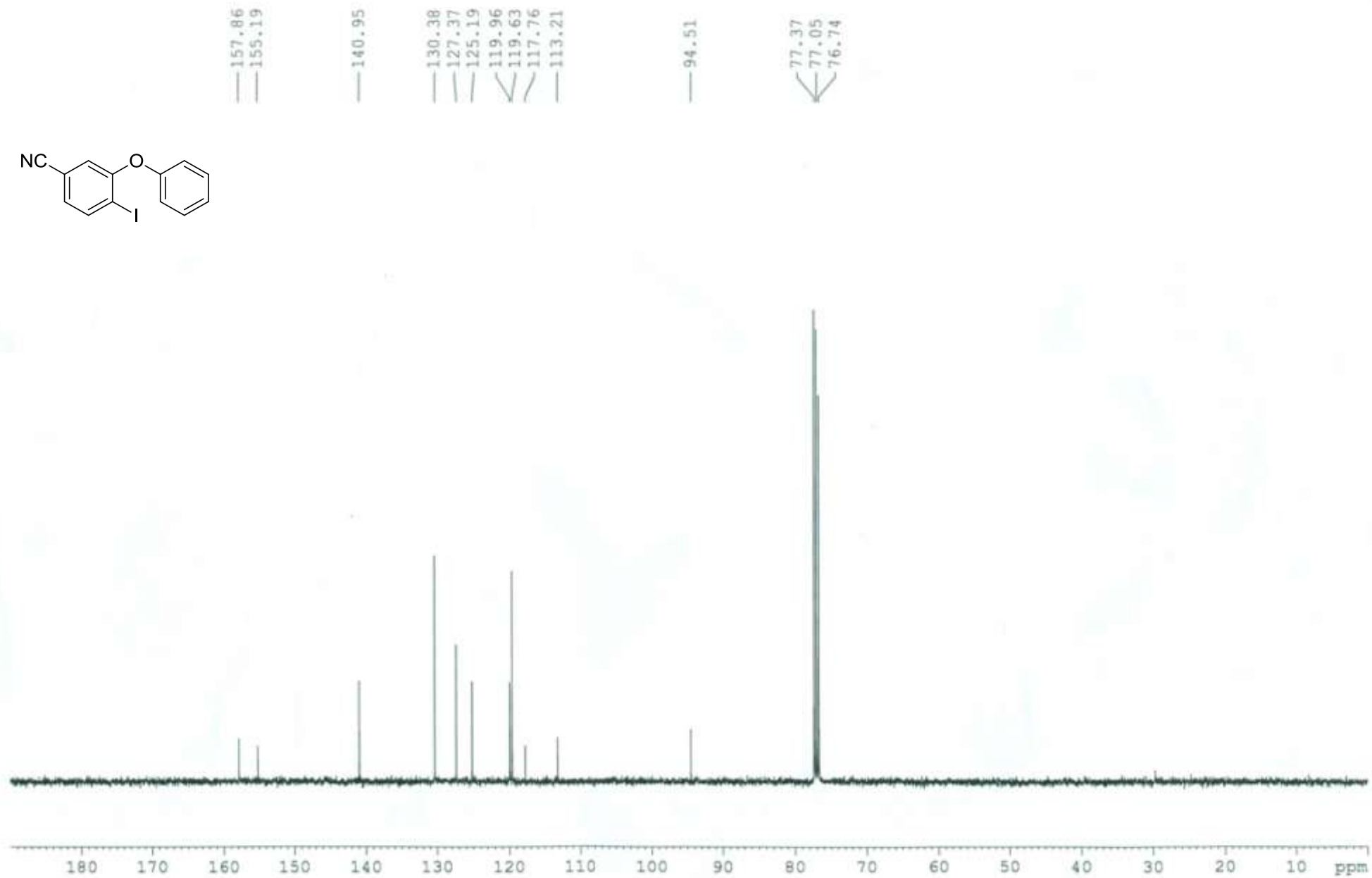
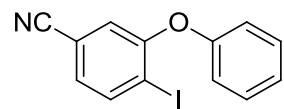
2-Iodo-3-phenoxybenzonitrile (3m) – ^{13}C NMR



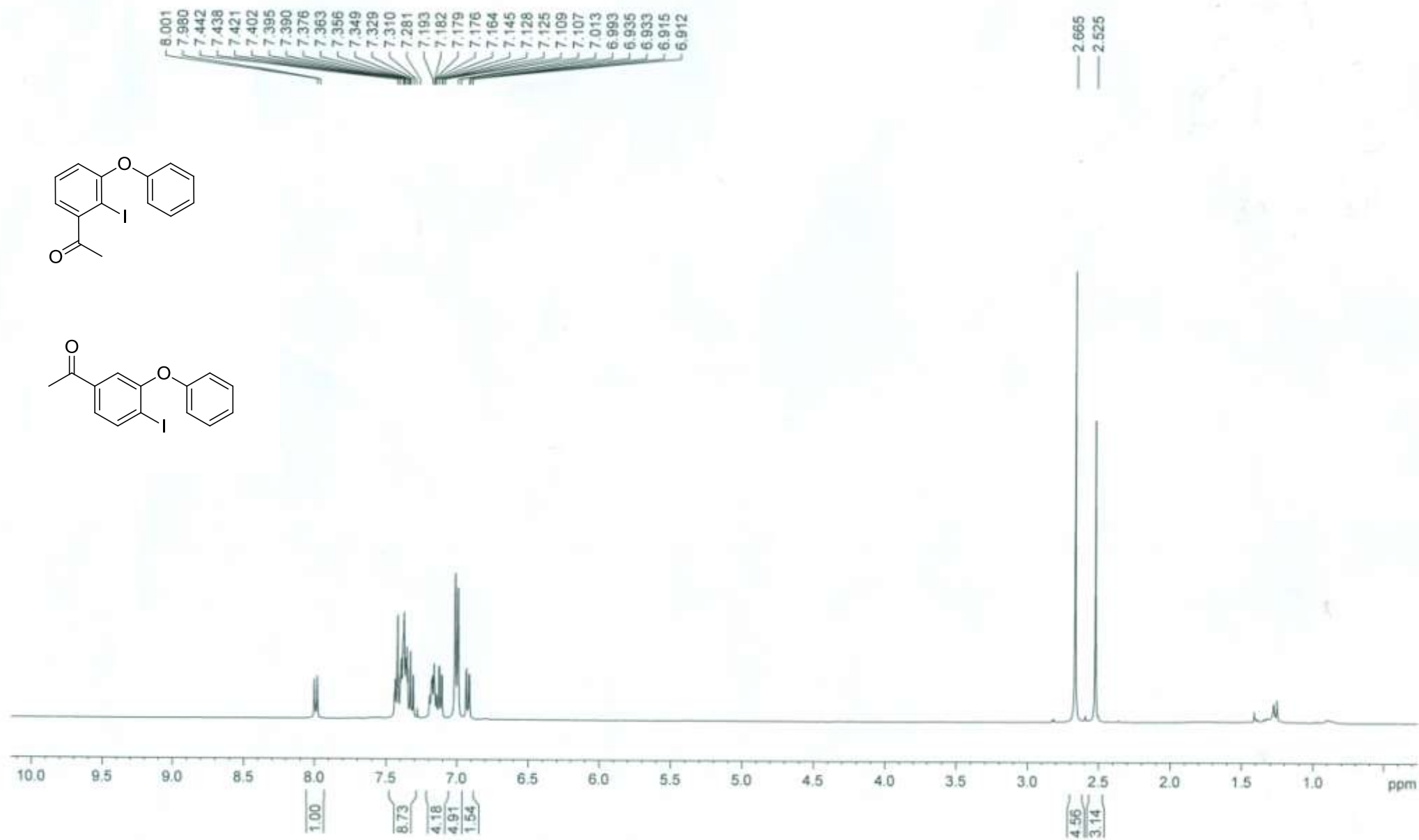
4-Iodo-3-phenoxybenzonitrile (3n) – ^1H NMR



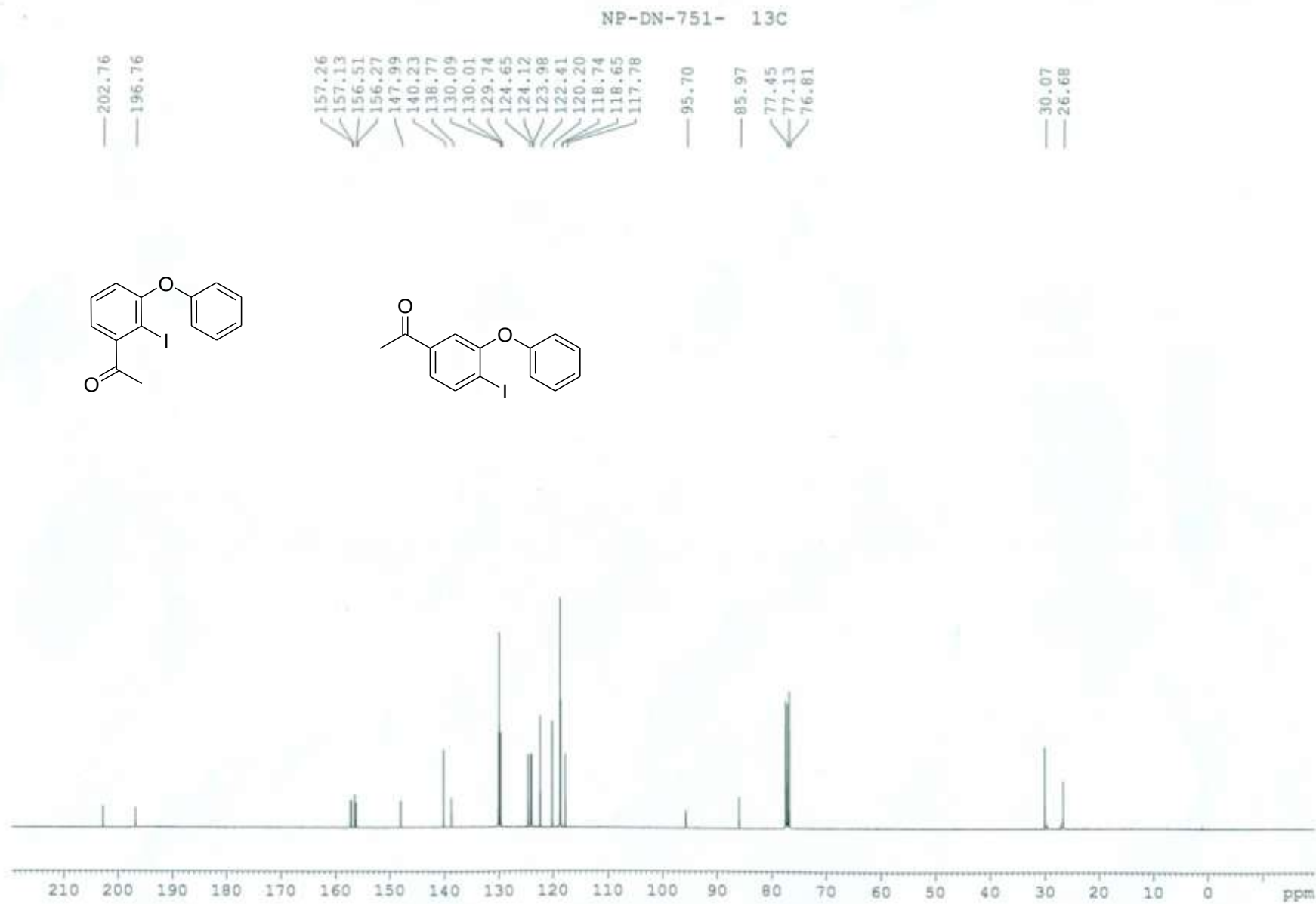
4-Iodo-3-phenoxybenzonitrile (3n) – ^{13}C NMR



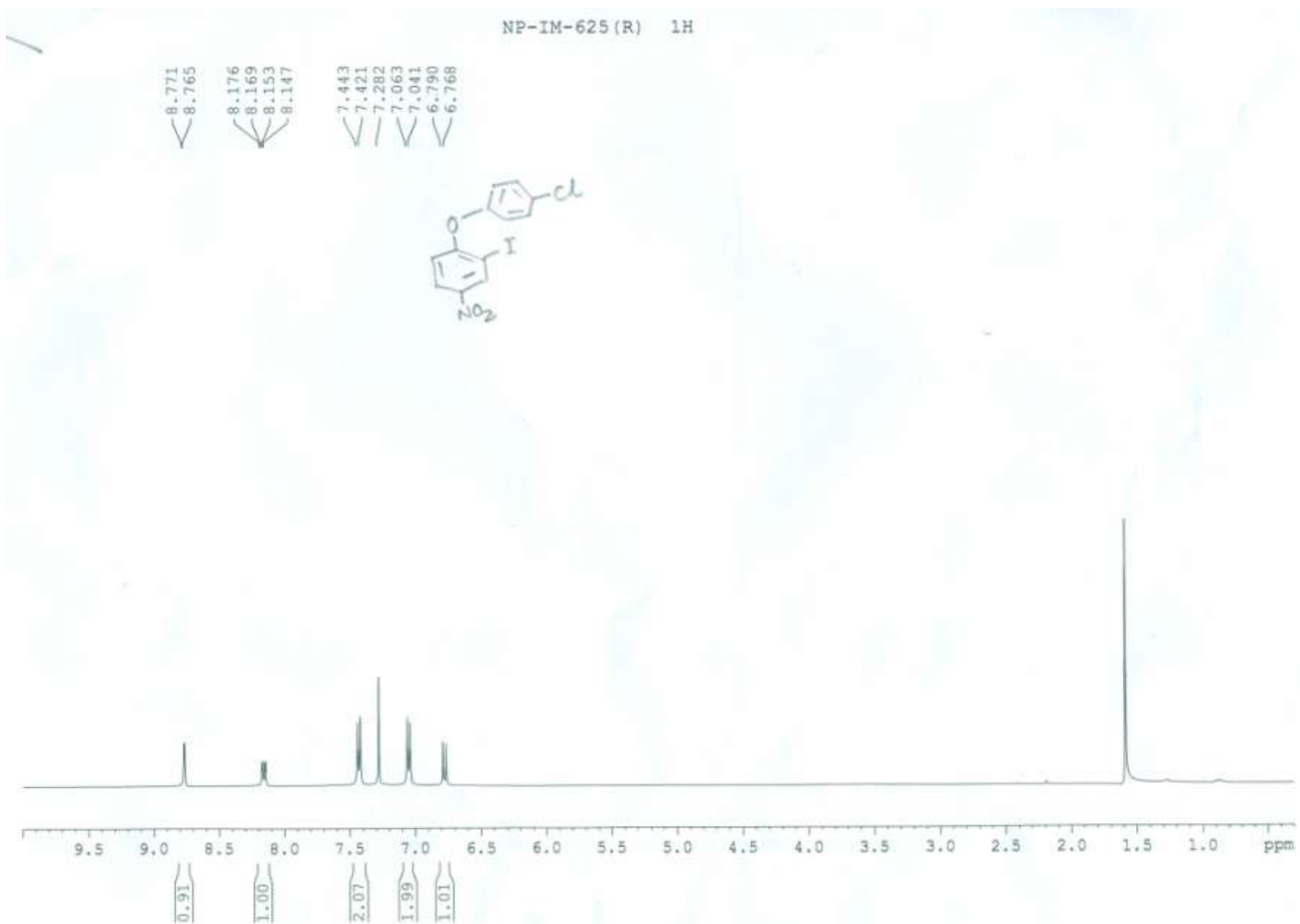
1-(2-Iodo-3-phenoxy-phenyl)-ethanone (3o) / 1-(4-iodo-3-phenoxyphenyl)ethanone (3p) – ^1H NMR



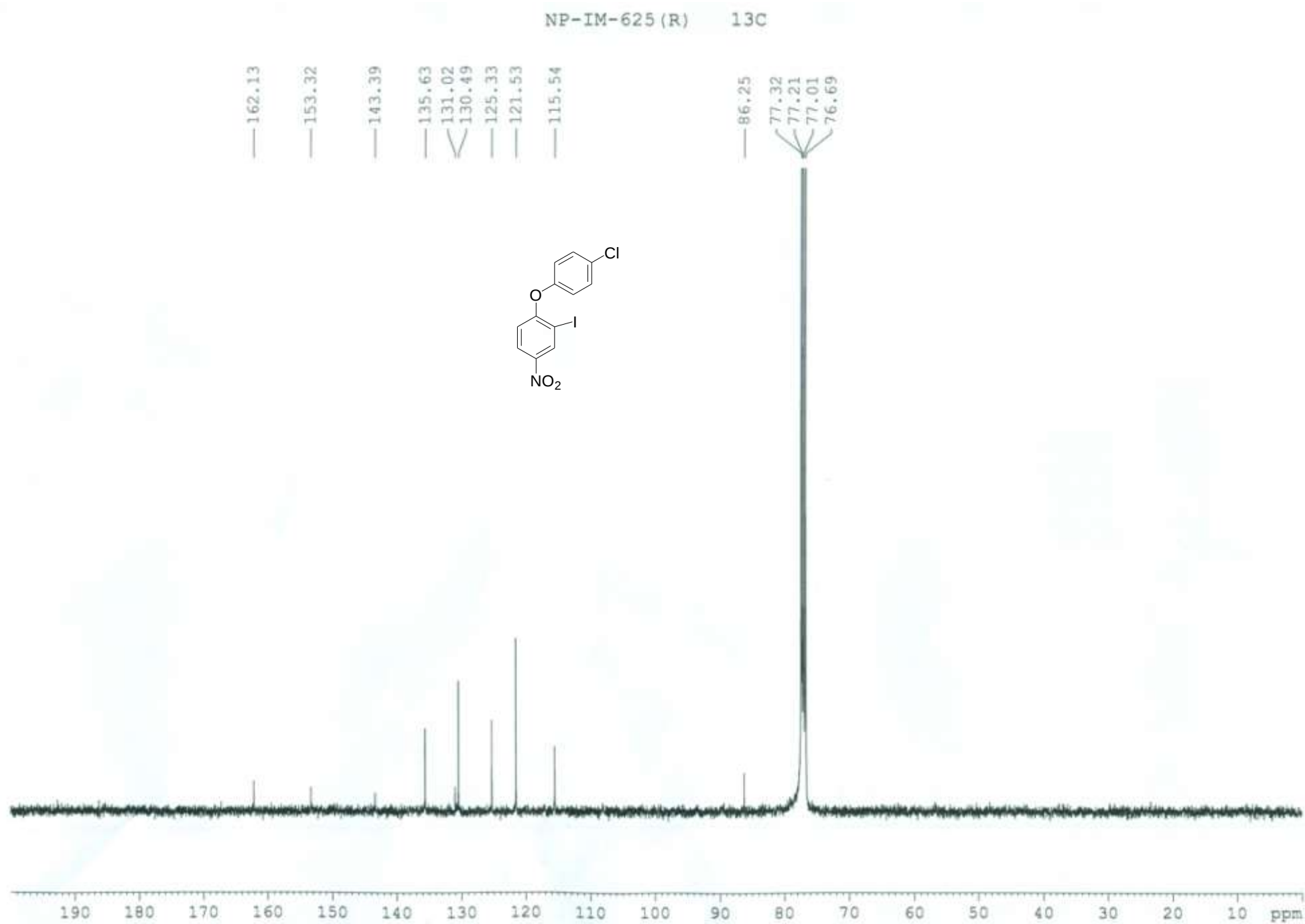
1-(2-Iodo-3-phenoxy-phenyl)-ethanone (3o) / 1-(4-iodo-3-phenoxyphenyl)ethanone (3p) – ^{13}C NMR



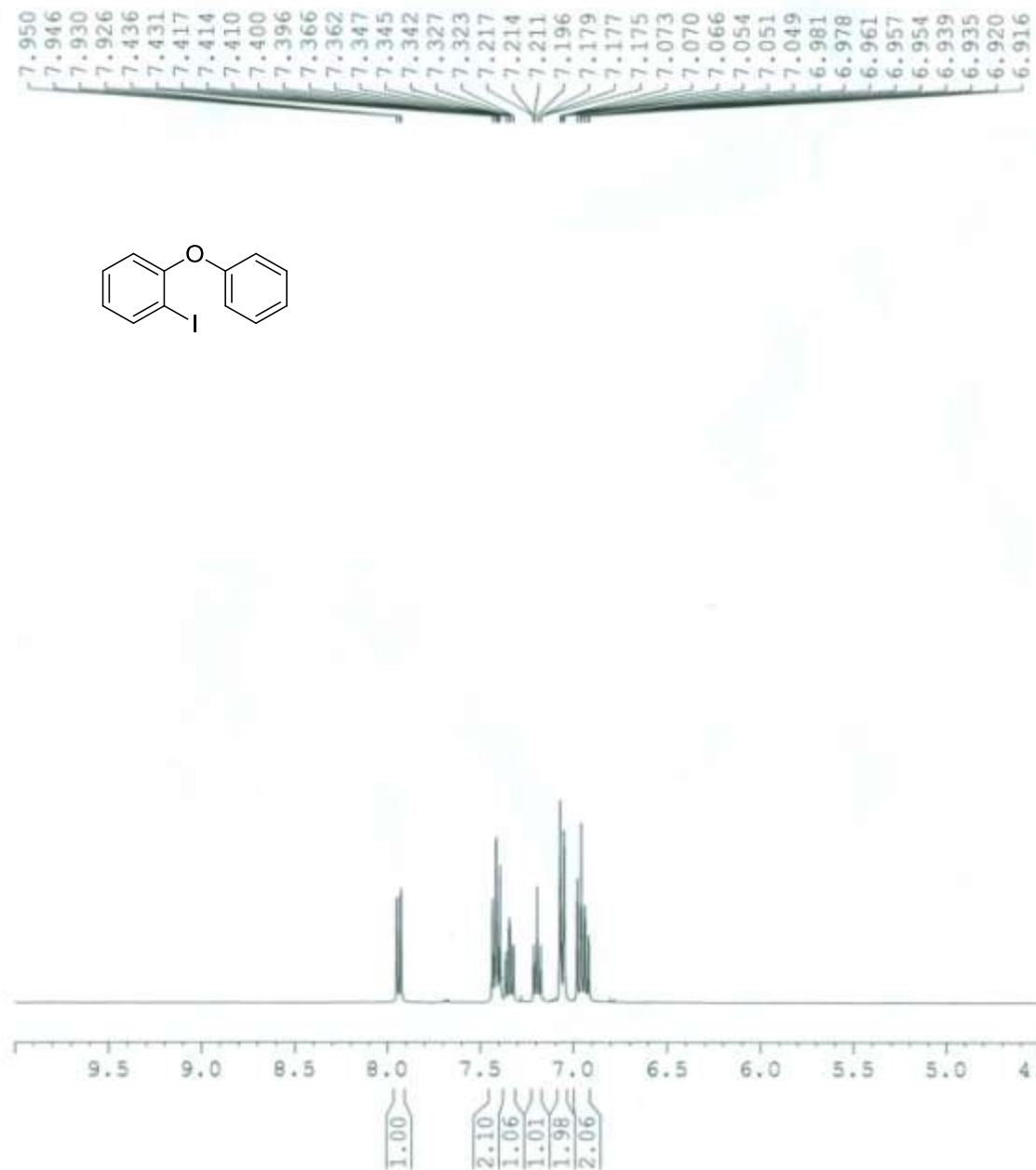
1-(2-iodo-4-nitrophenoxy)-4-chlorobenzene (3q)- ^1H NMR



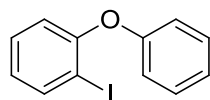
1-(2-iodo-4-nitrophenoxy)-4-chlorobenzene (3q)-¹³C NMR



1-iodo-2-phenoxybenzene (8) – ^1H NMR



1-iodo-2-phenoxybenzene – ^{13}C NMR



156.93
156.58

139.98

129.98

129.80

125.49

123.64

119.56

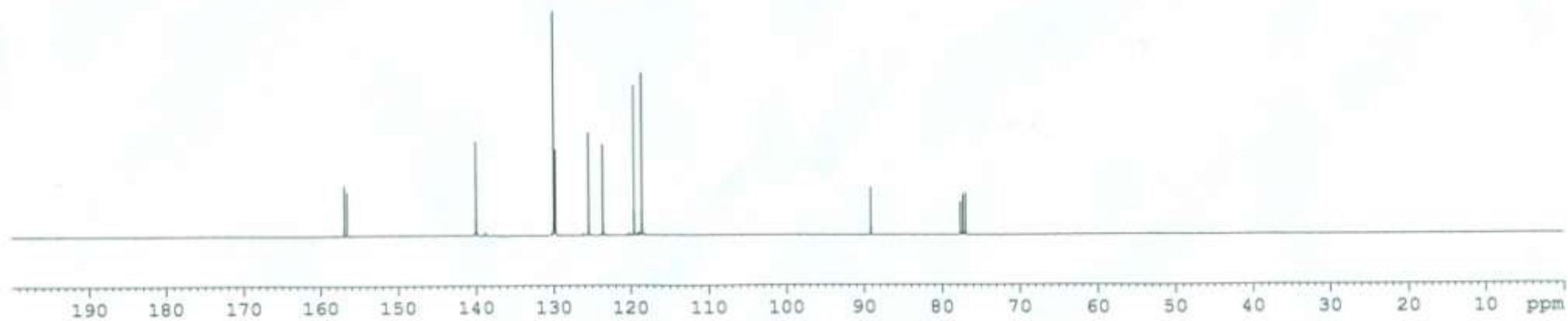
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89.14

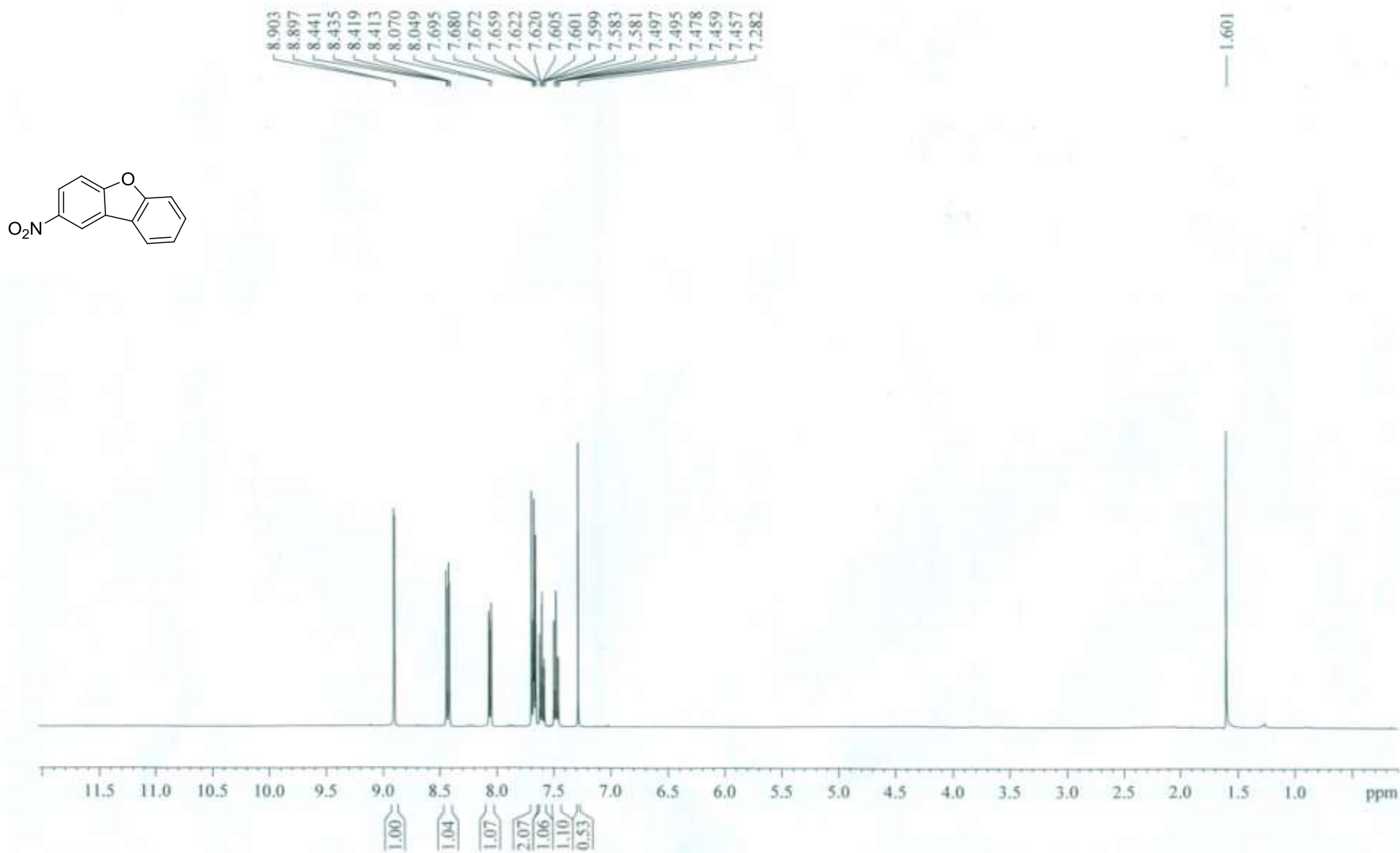
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77.28

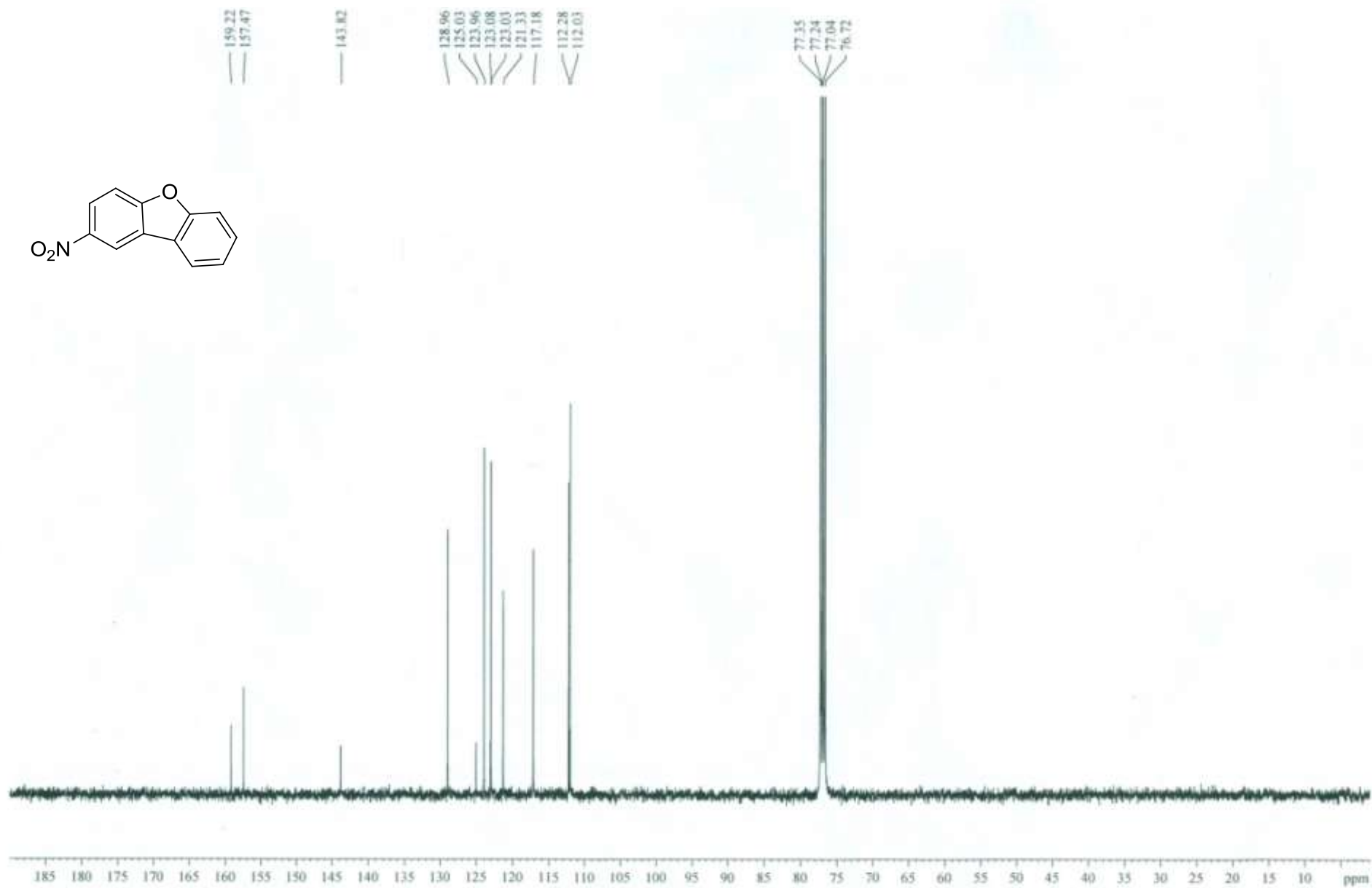
76.96



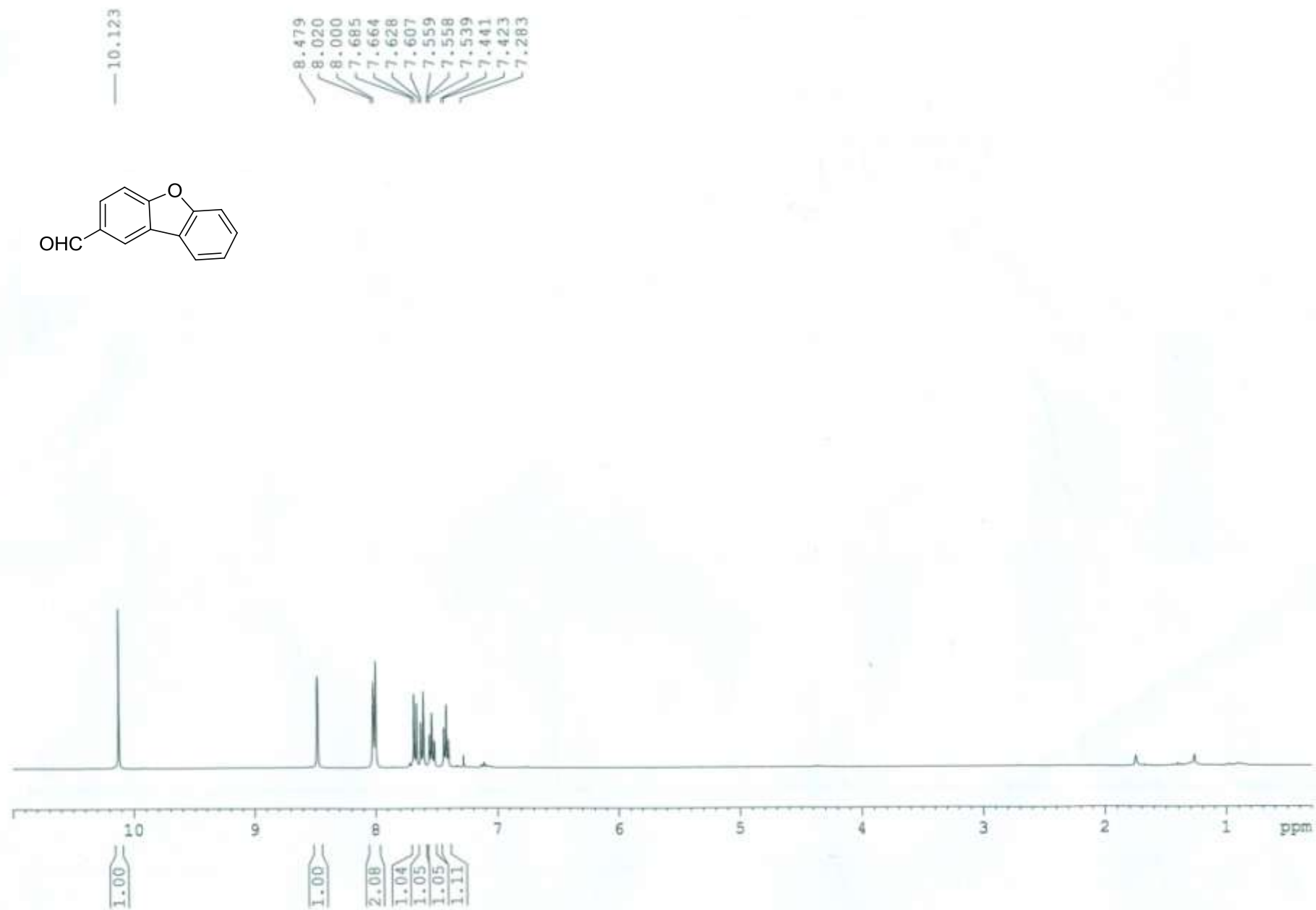
2-Nitro-dibenzofuran (6a) – ^1H NMR



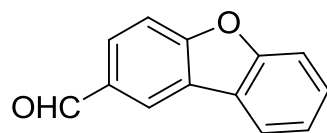
2-Nitro-dibenzofuran (6a) – ^{13}C NMR



Dibenzofuran-2-carbaldehyde (6b) – ^1H NMR



Dibenzofuran-2-carbaldehyde (6b) – ^{13}C NMR

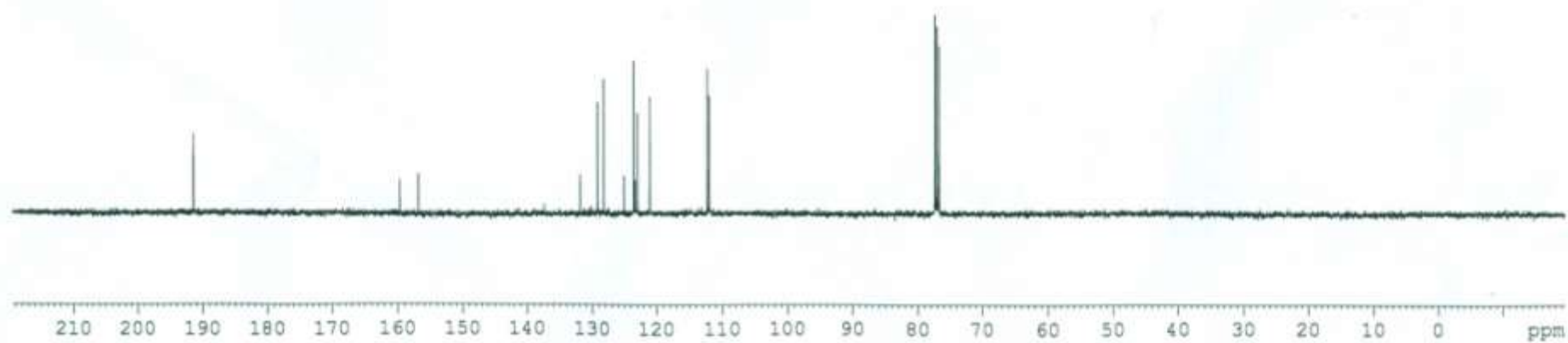


— 191.47

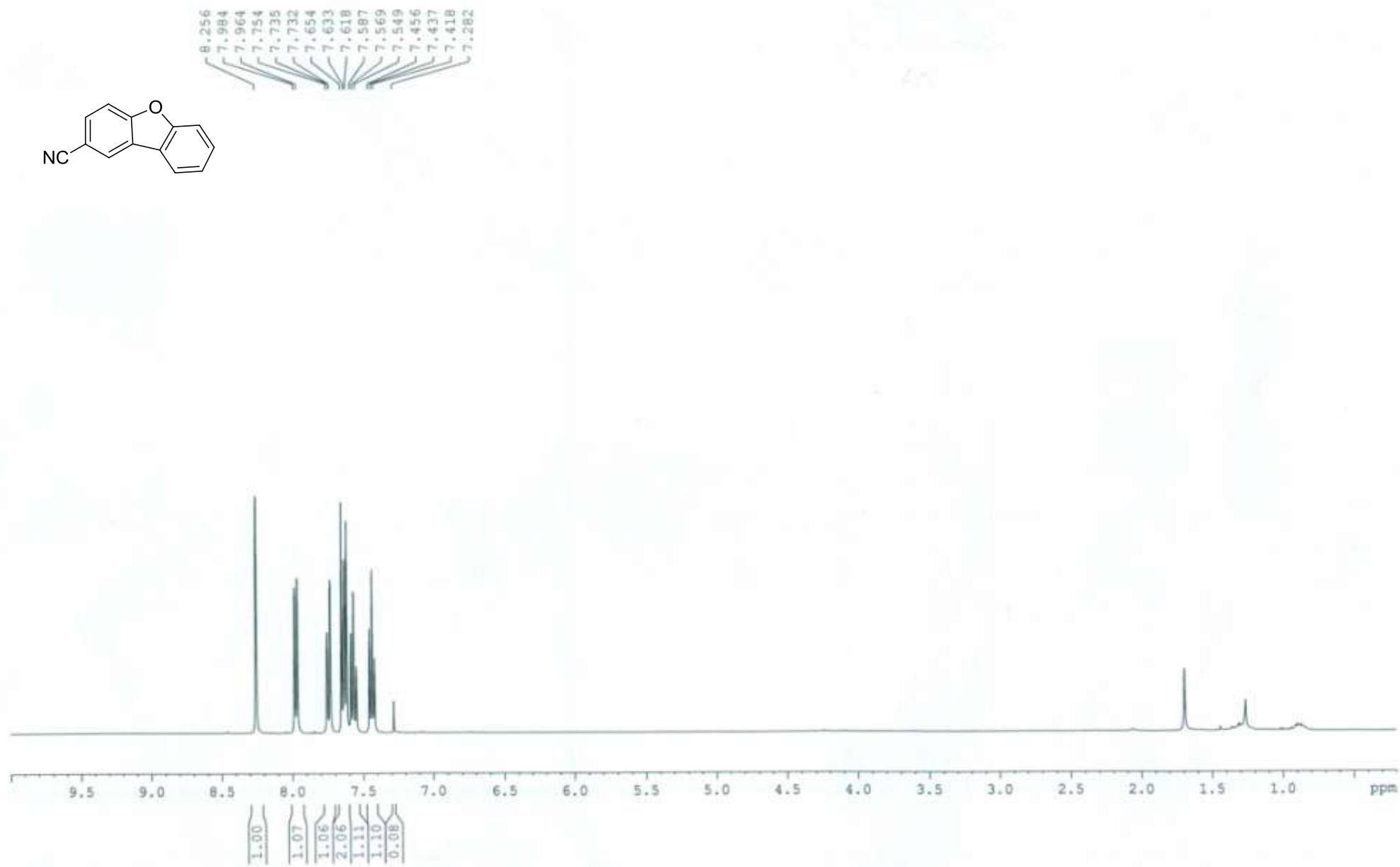
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— 156.89

131.93
129.23
128.28
125.10
123.60
123.38
123.03
121.10
112.32
112.05

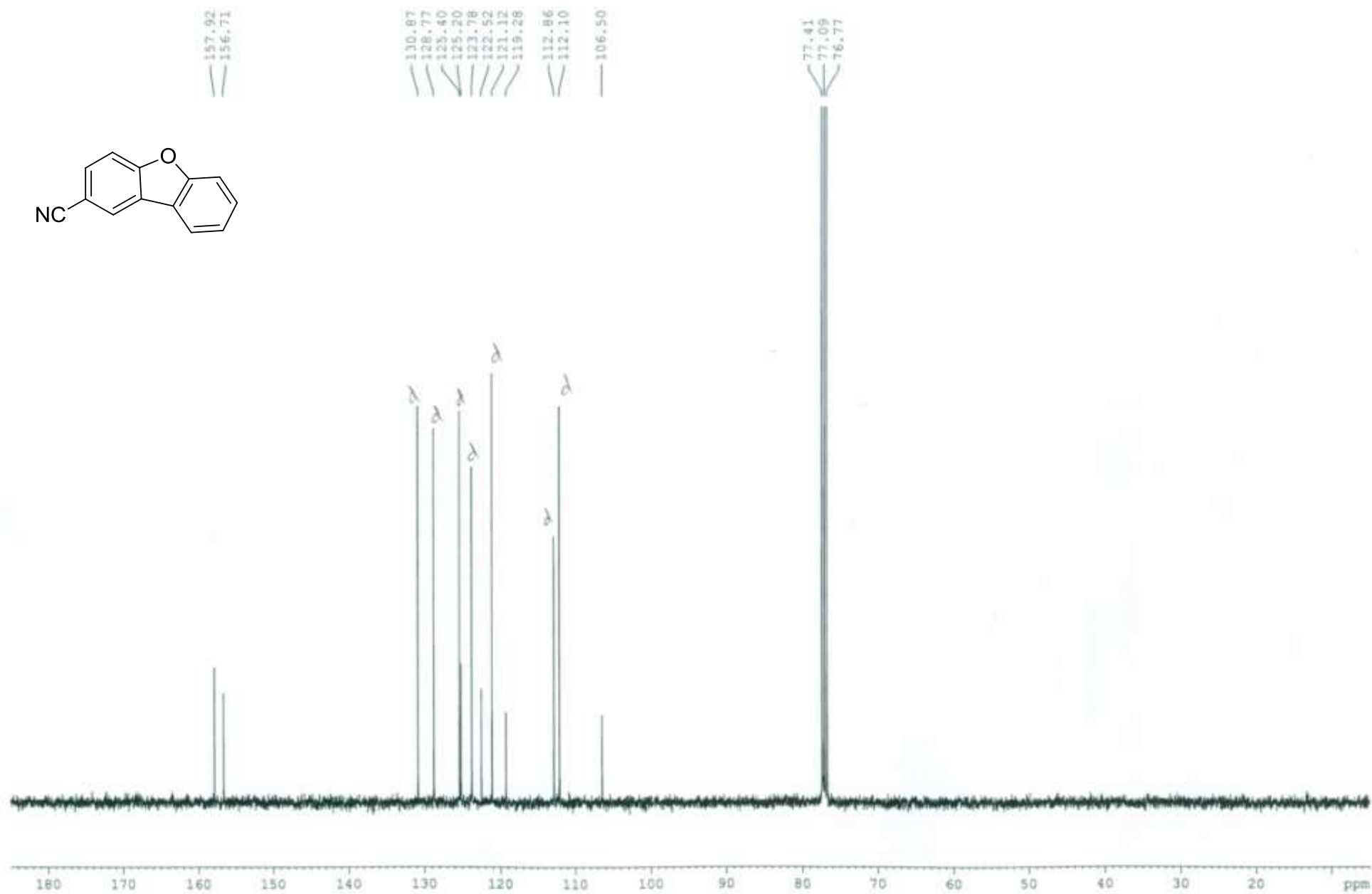
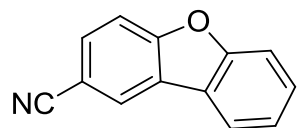
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77.08
76.77



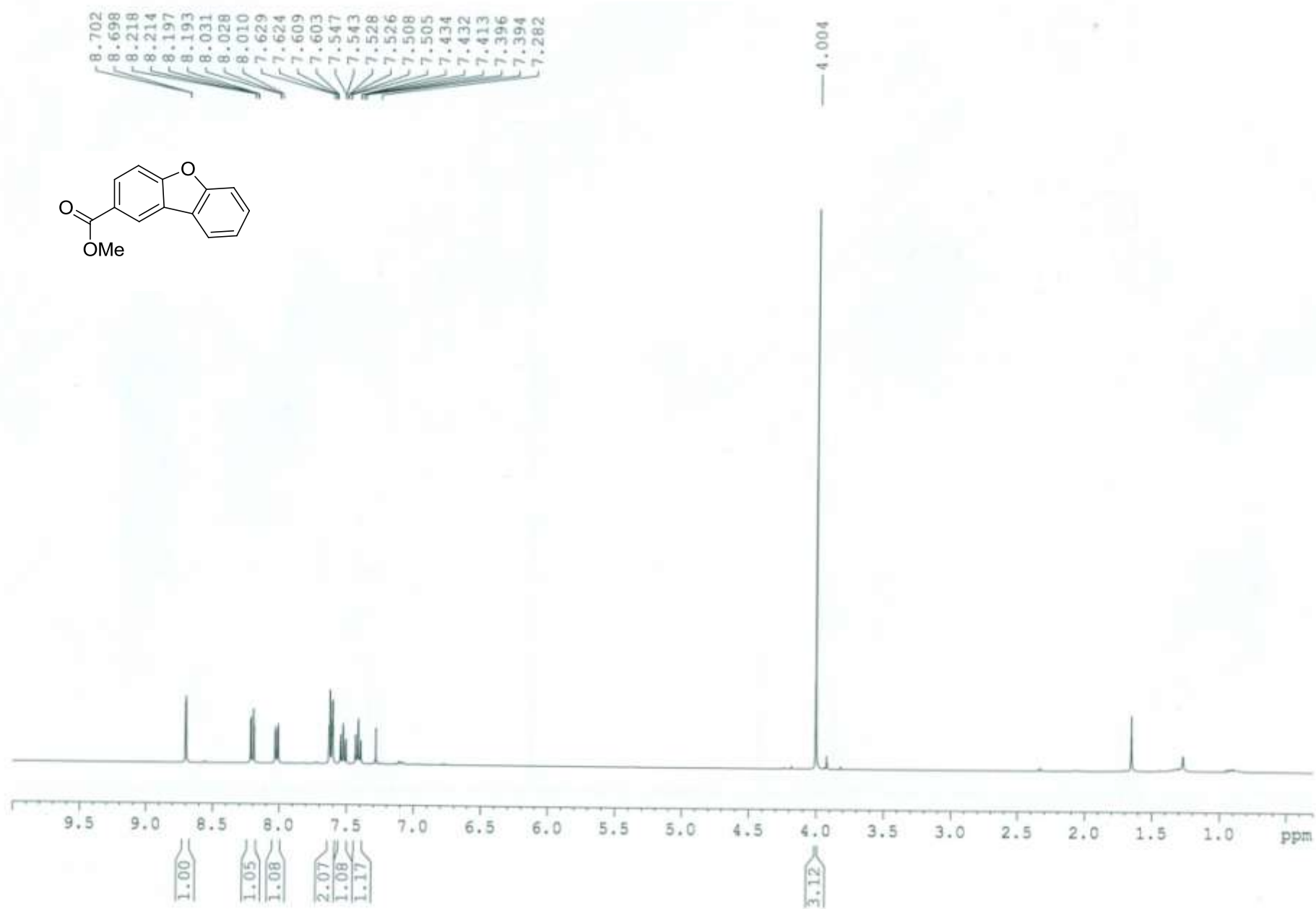
Dibenzofuran-2-carbonitrile (6c) – ^1H NMR



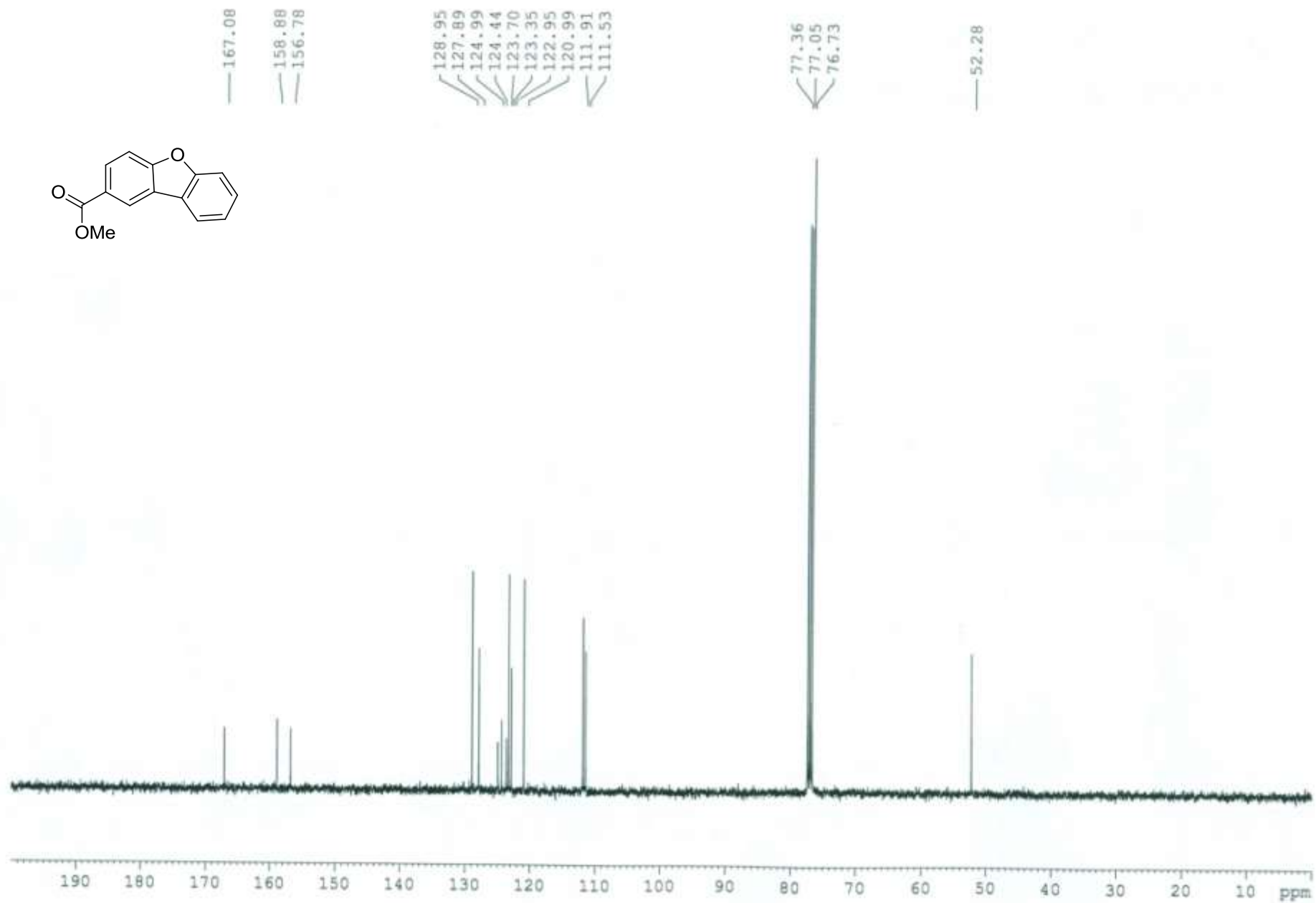
Dibenzofuran-2-carbonitrile (6c) – ^{13}C NMR



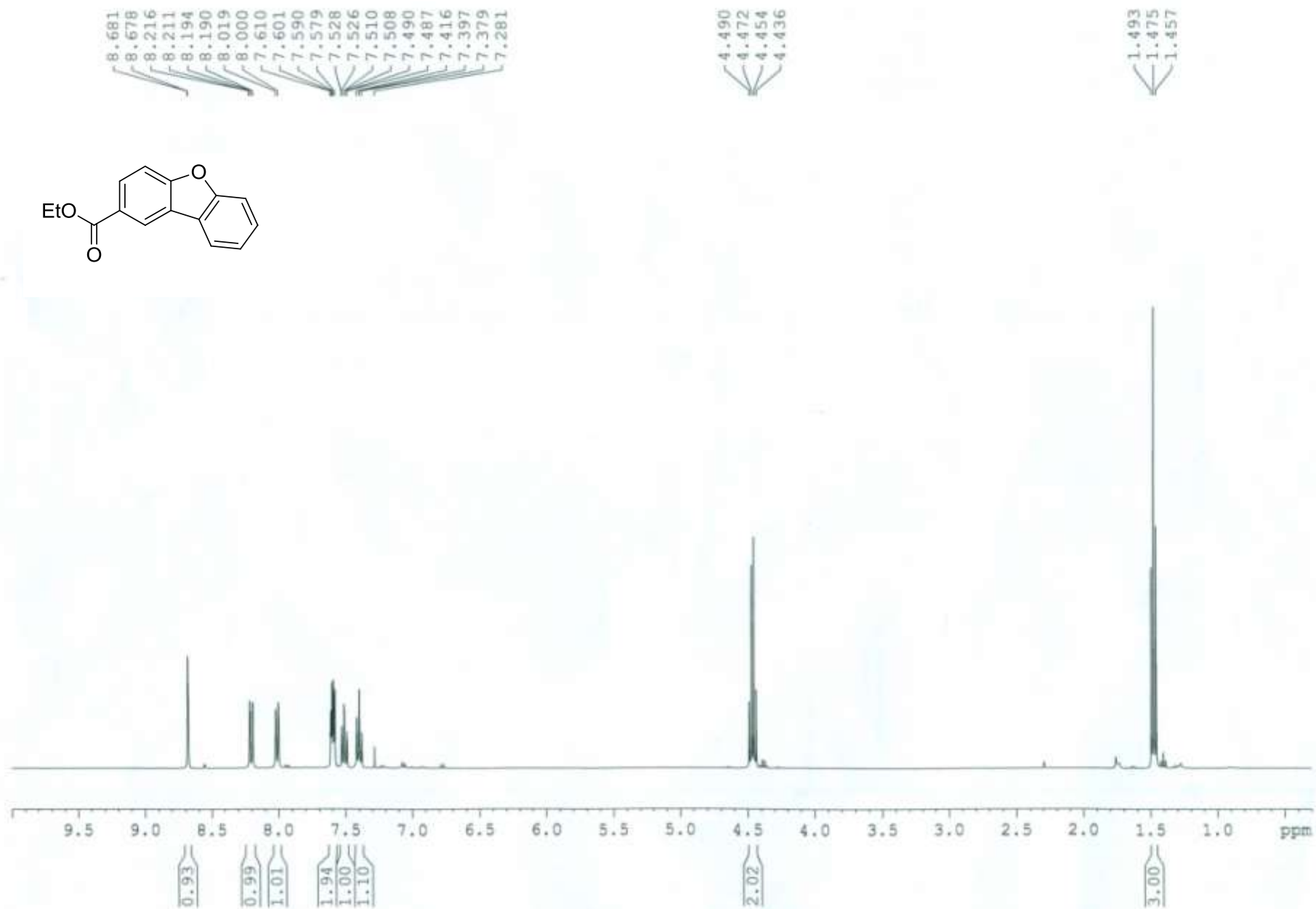
Dibenzofuran-2-carboxylic acid methyl ester (6d) – ^1H NMR



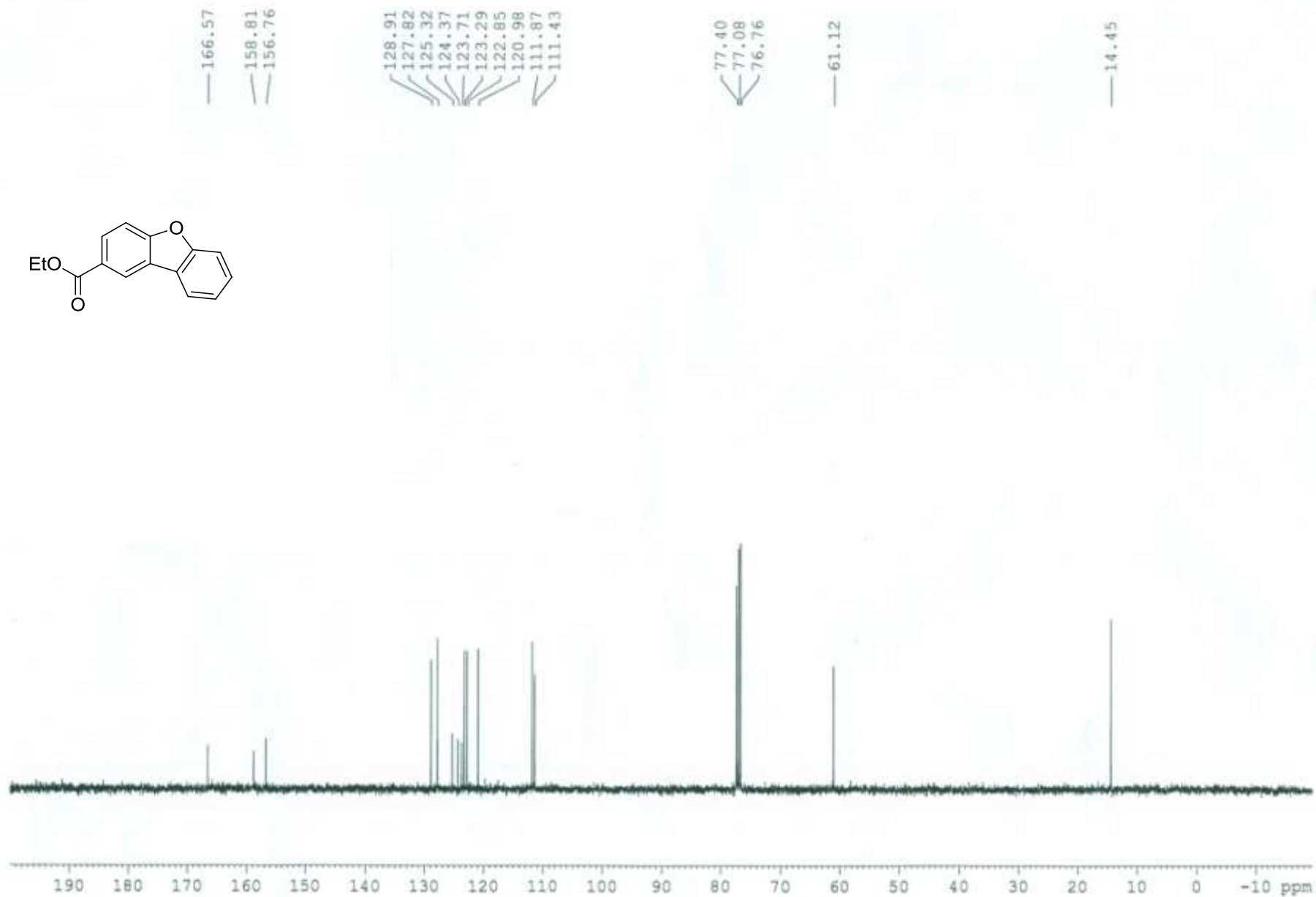
Dibenzofuran-2-carboxylic acid methyl ester (6d) – ^{13}C NMR



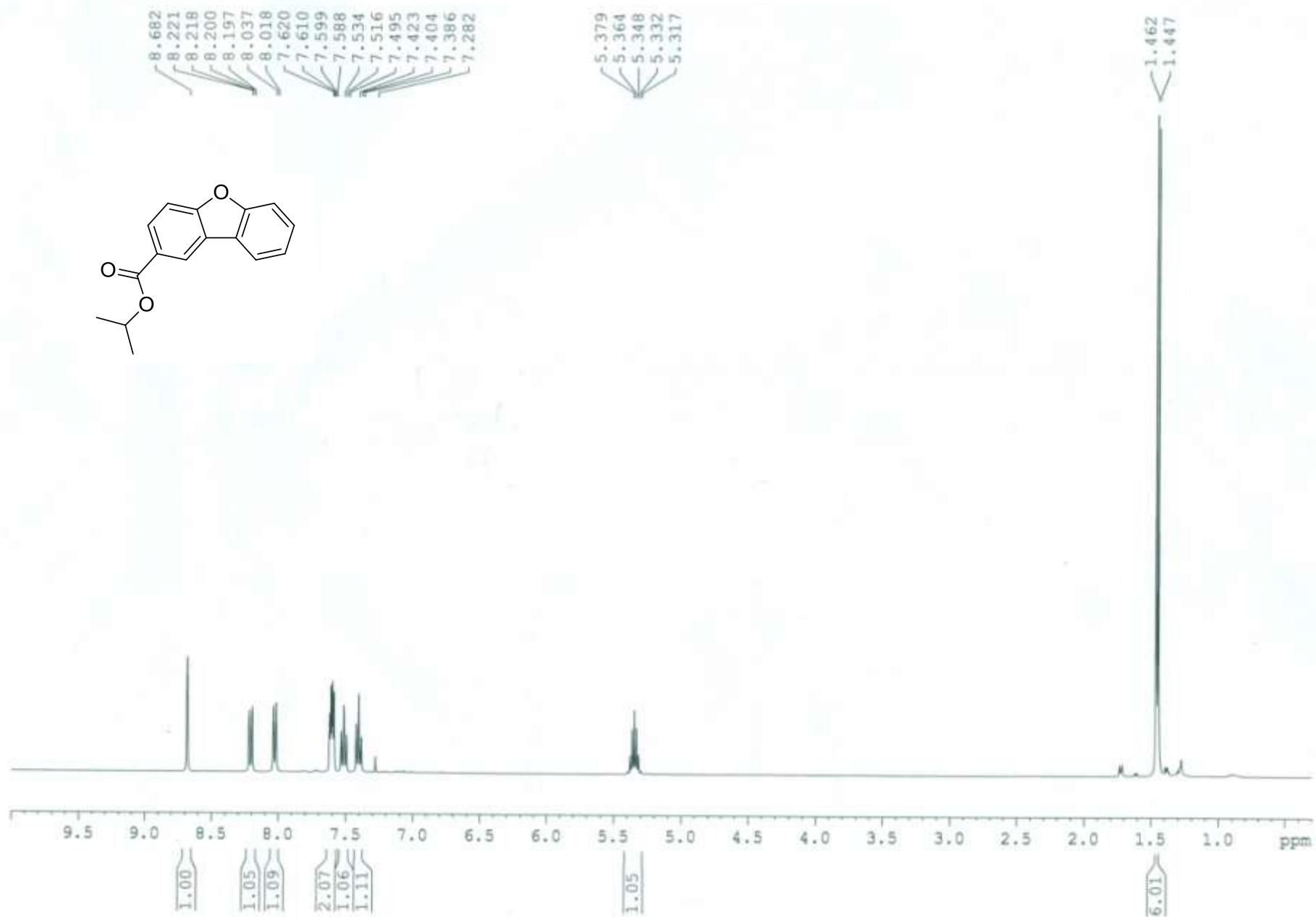
Dibenzofuran-2-carboxylic acid ethyl ester (6e) – ^1H NMR



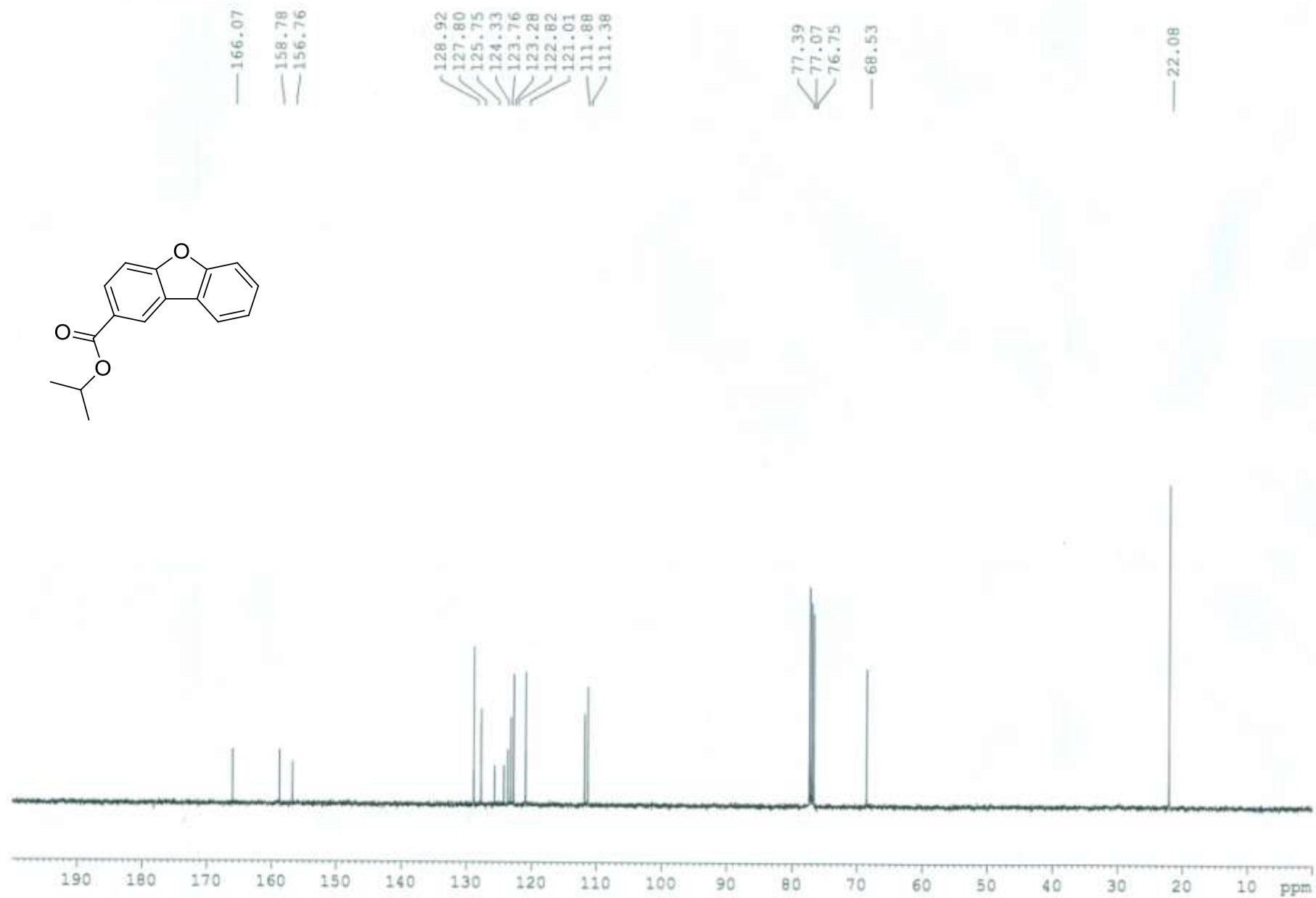
Dibenzofuran-2-carboxylic acid ethyl ester (6e) – ^{13}C NMR



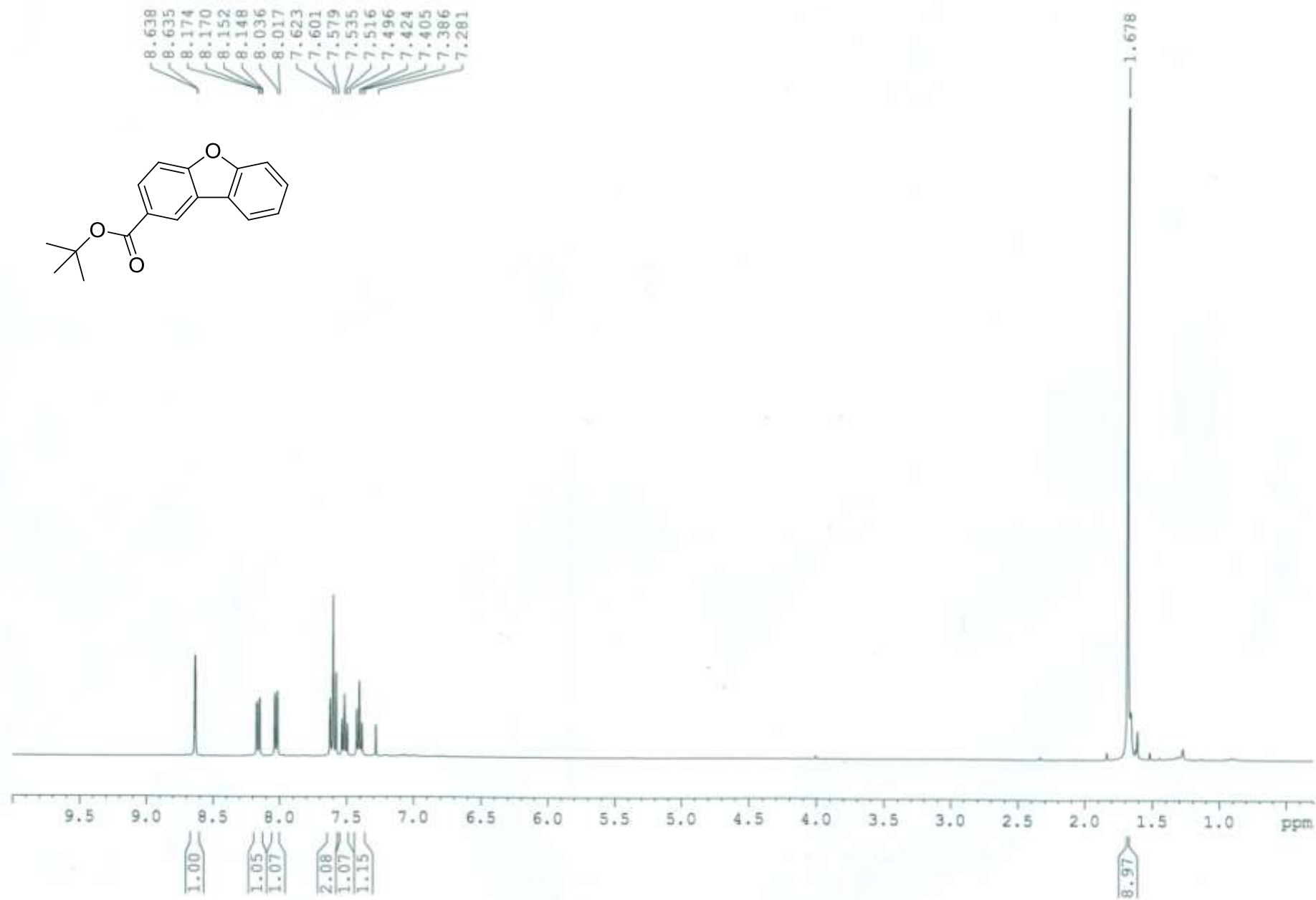
Dibenzofuran-2-carboxylic acid isopropyl ester (6f) – ^1H NMR



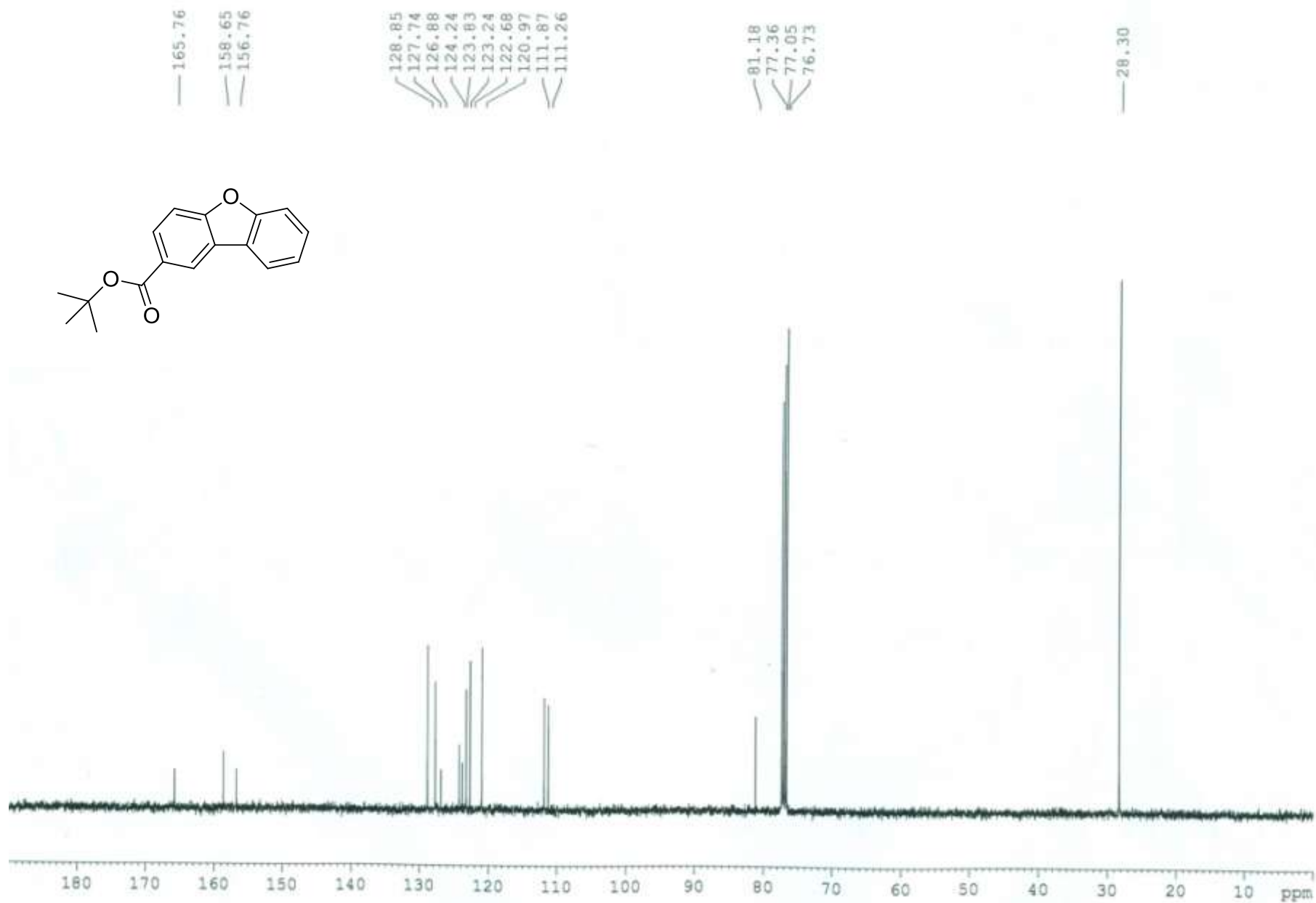
Dibenzofuran-2-carboxylic acid isopropyl ester (6f) – ^{13}C NMR



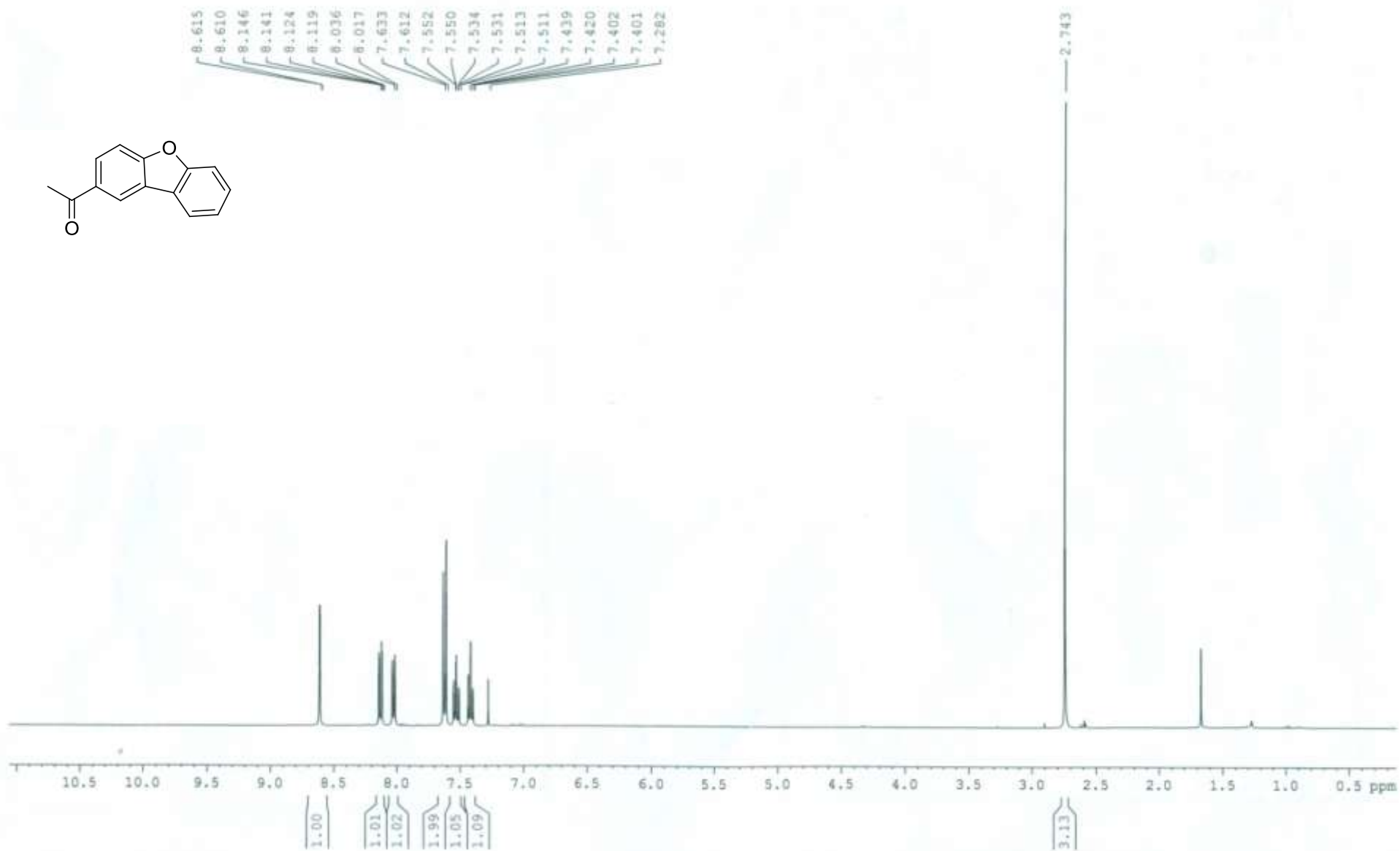
Tert-butyl dibenzofuran-2-carboxylate (6g) – ^1H NMR



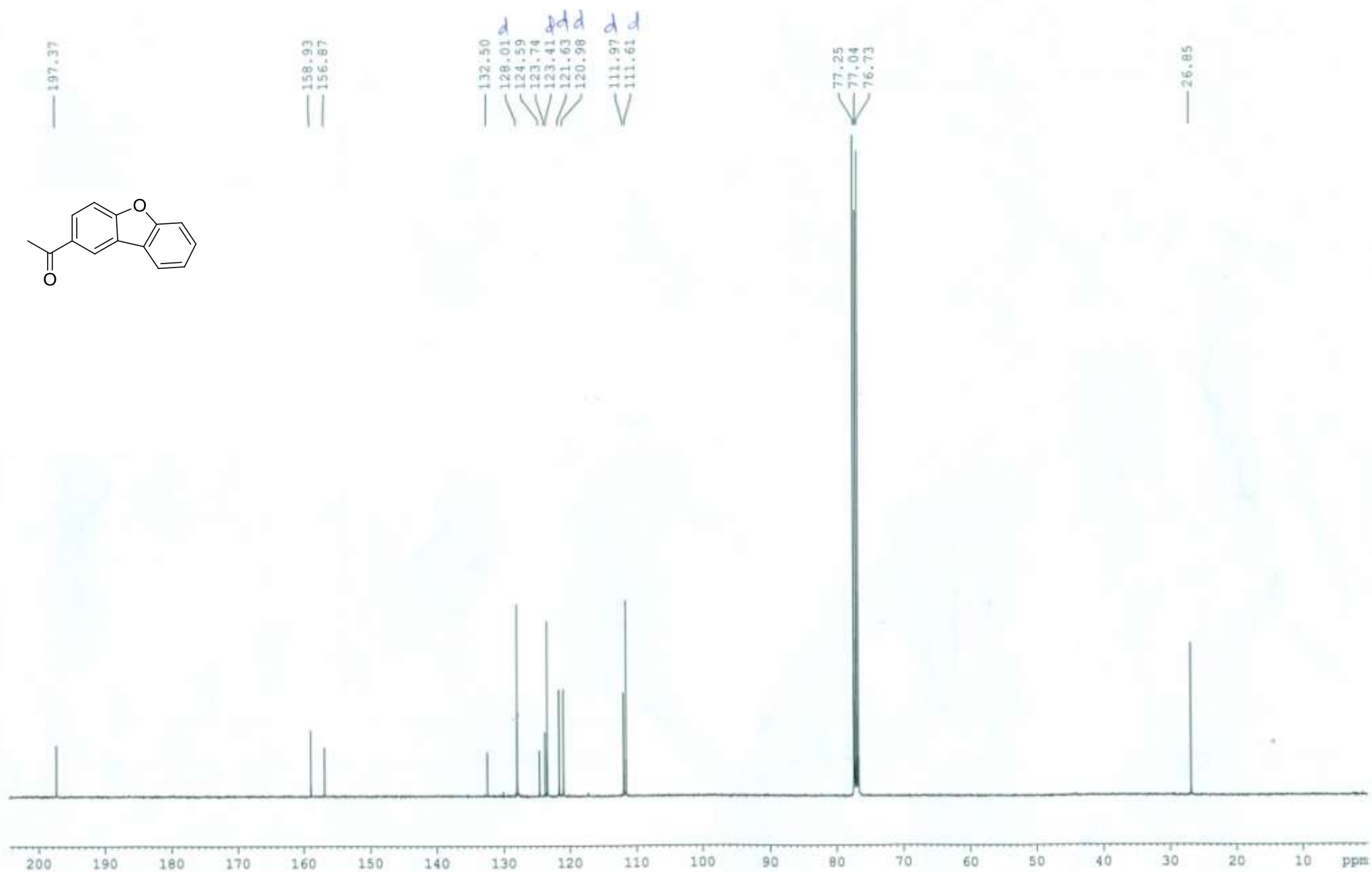
Tert-butyl dibenzofuran-2-carboxylate (6g) – ^{13}C NMR



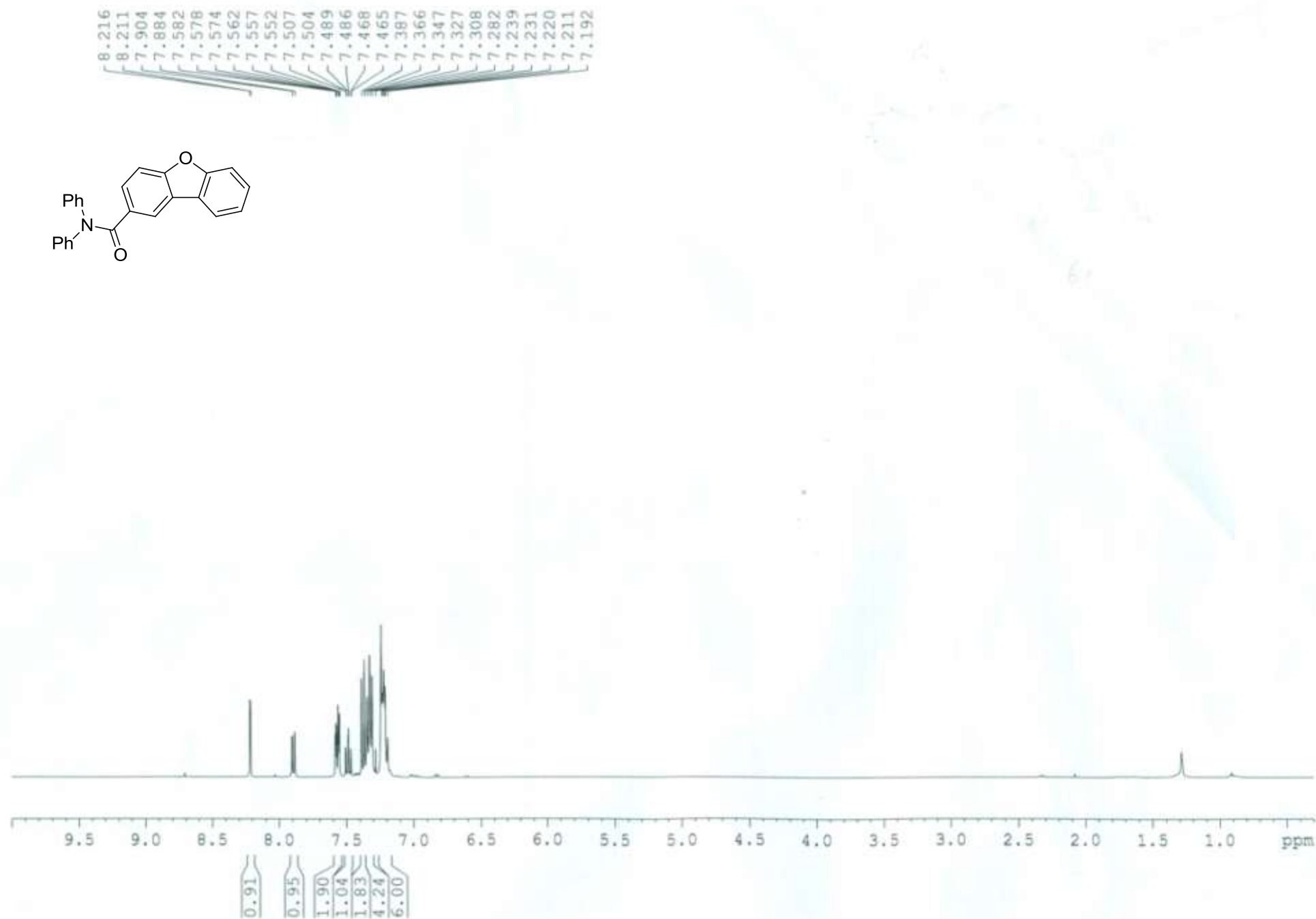
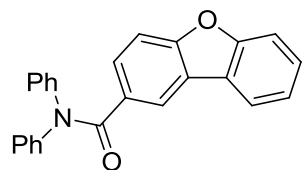
2-Acetyldibenzofuran (6h) – ^1H NMR



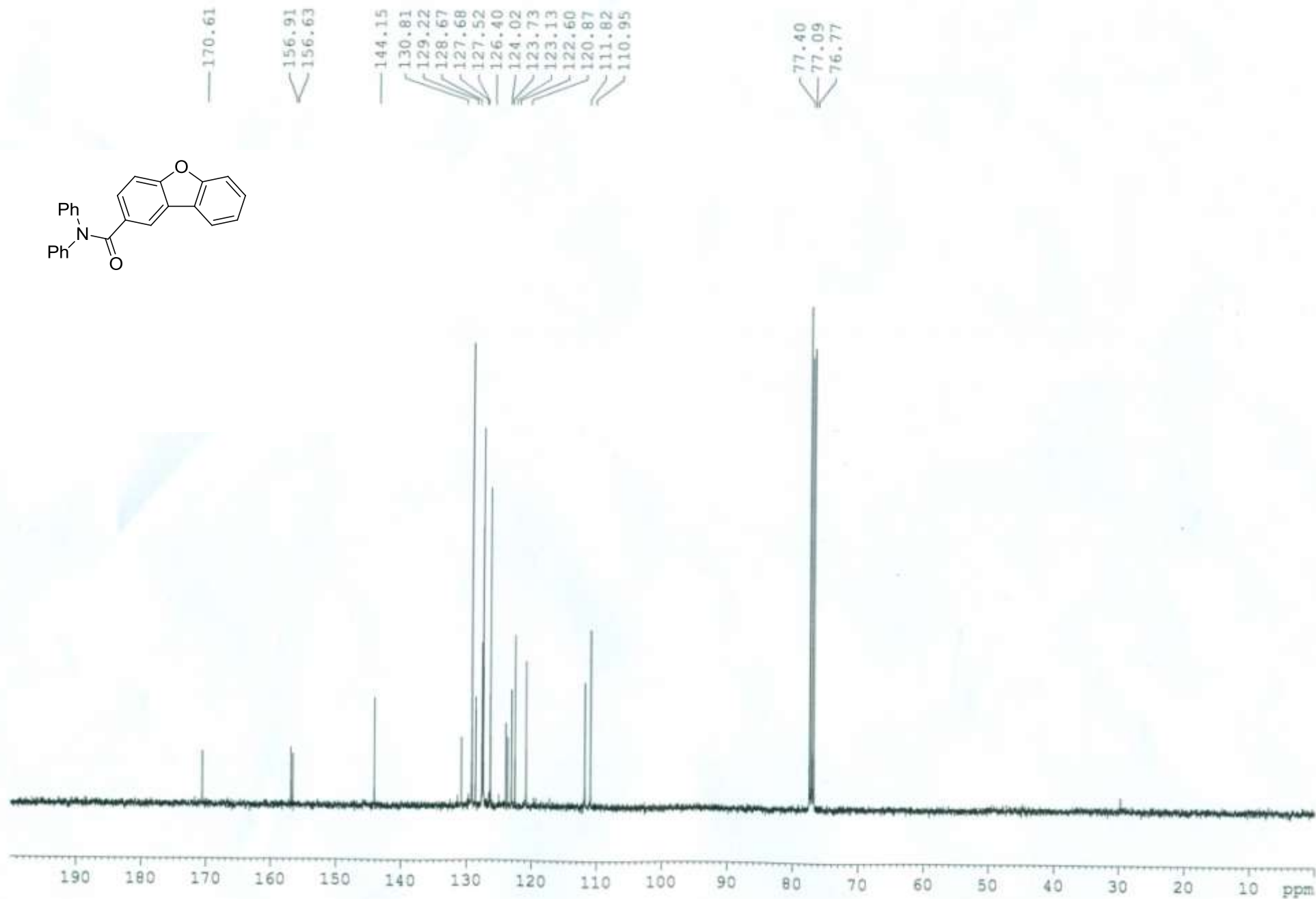
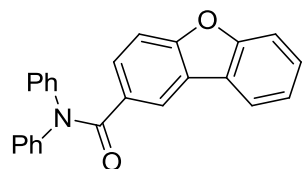
2-Acetyldibenzofuran (6h) – ^{13}C NMR



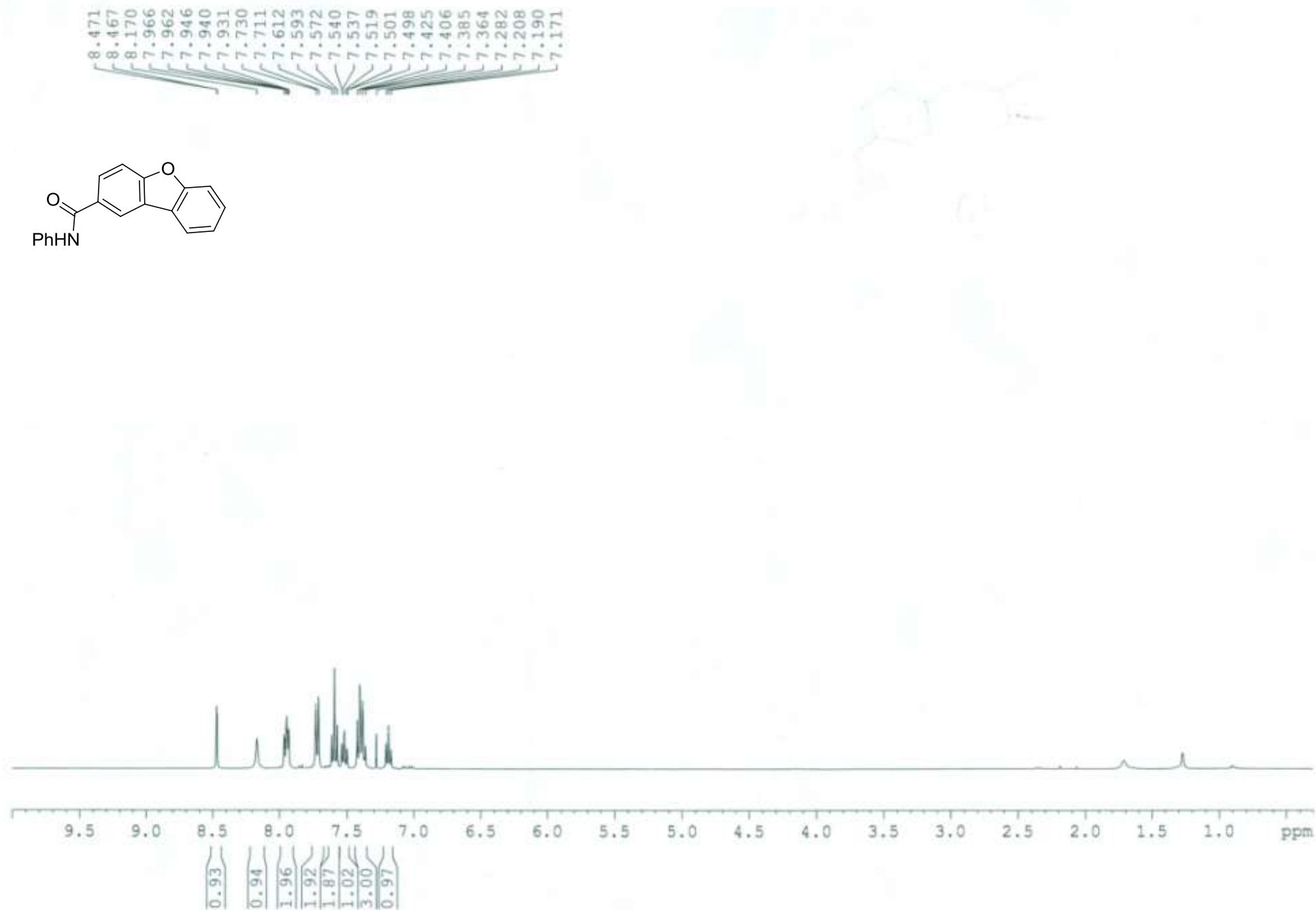
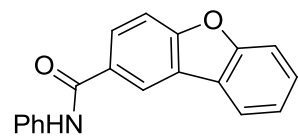
***N,N*-diphenyldibenzofuran-2-carboxamide (6i) – ^1H NMR**



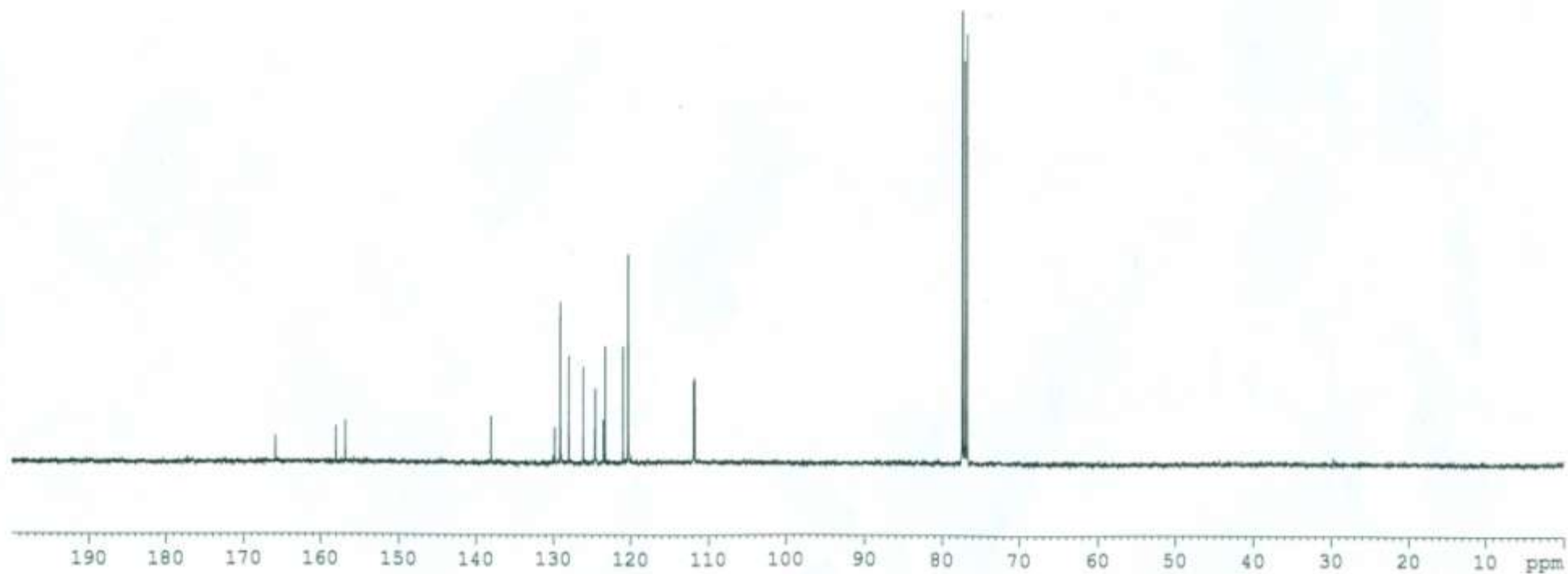
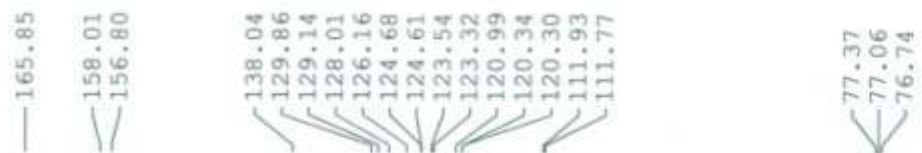
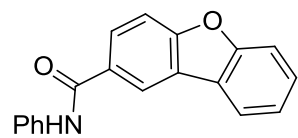
N,N-diphenyldibenzofuran-2-carboxamide (6i) – ^{13}C NMR



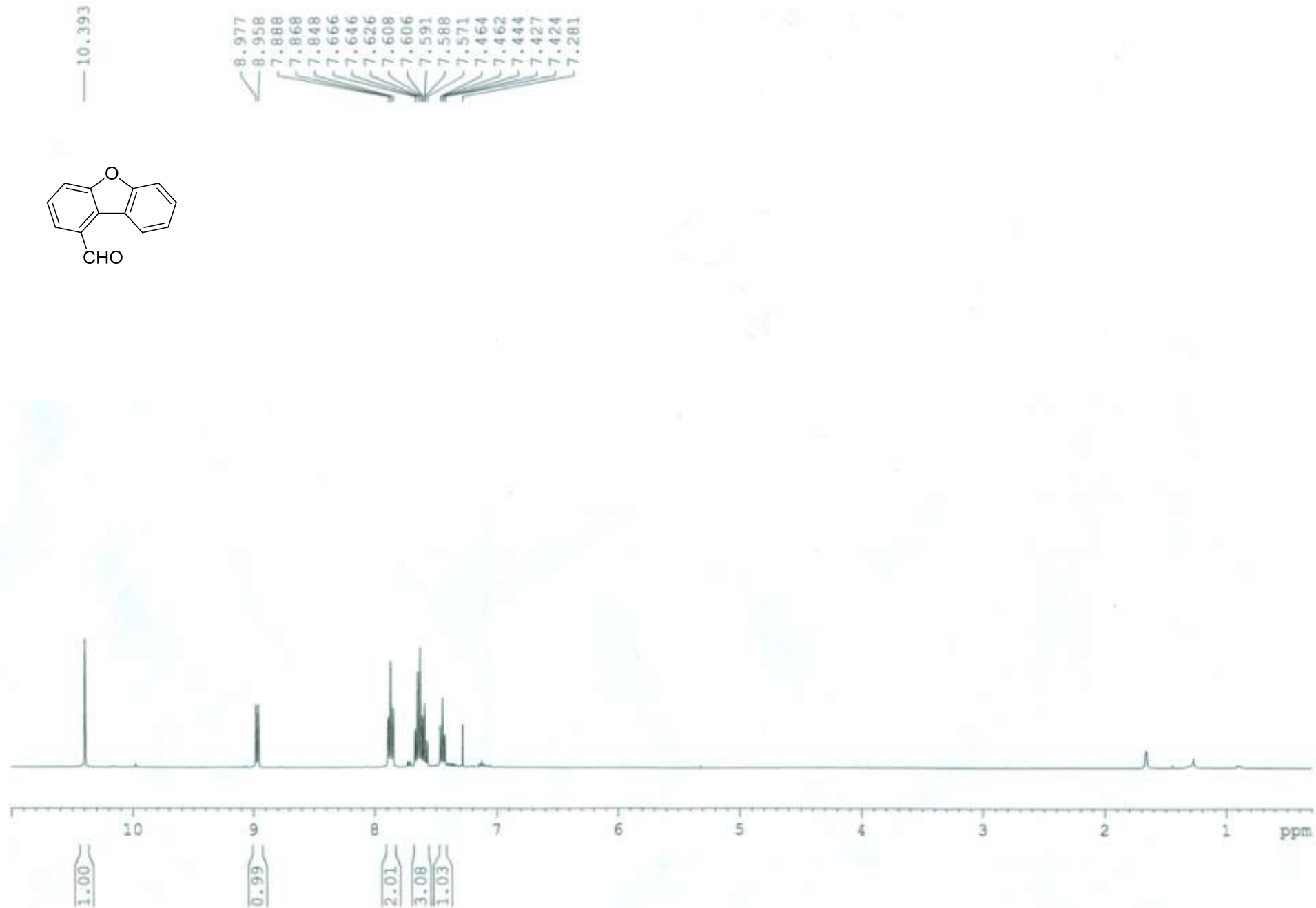
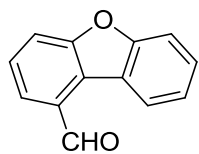
Dibenzofuran-2-carboxylic acid phenylamide (6j) – ^1H NMR



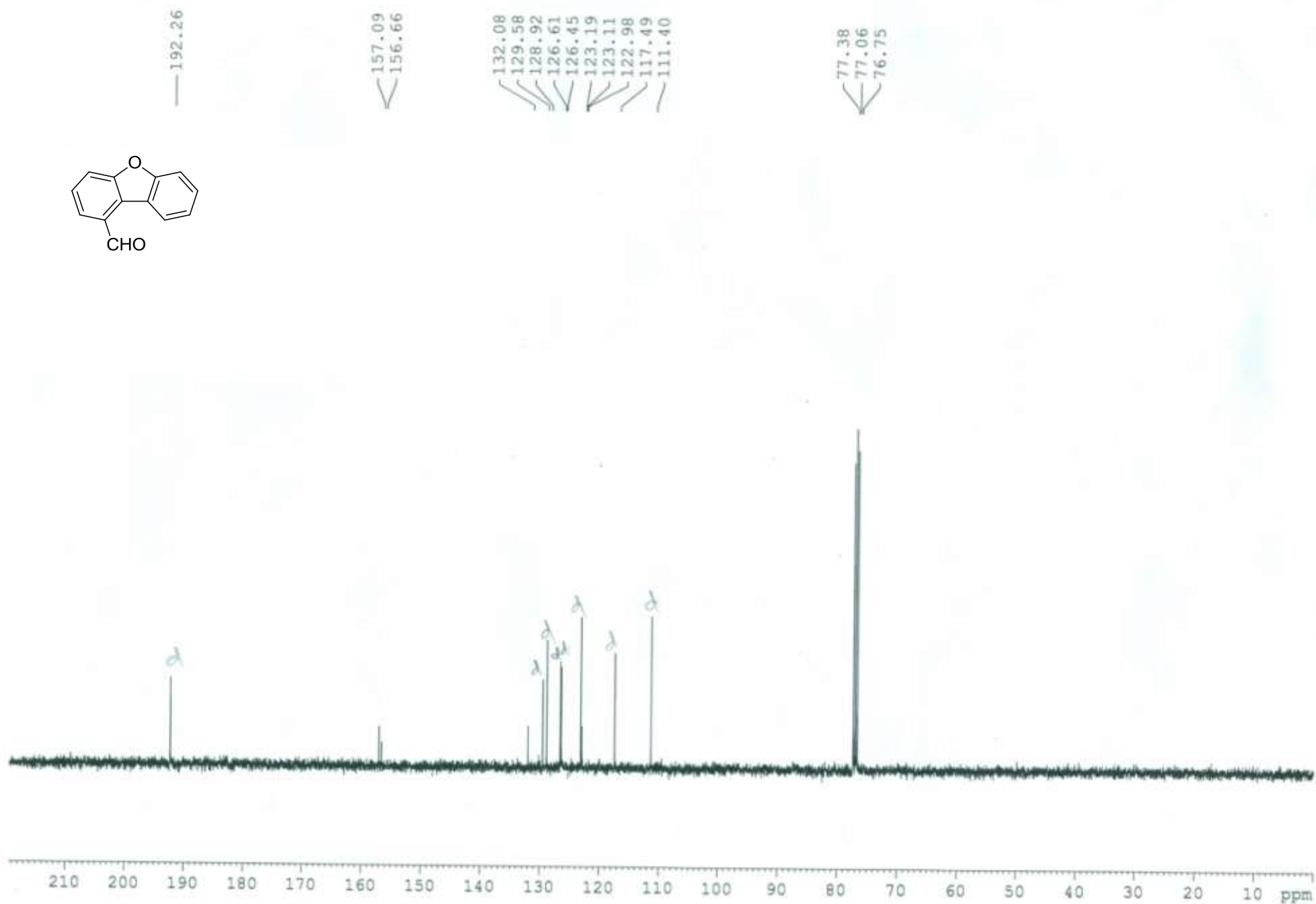
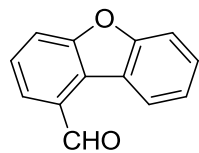
Dibenzofuran-2-carboxylic acid phenylamide (6j) – ^{13}C NMR



Dibenzofuran-1-carbaldehyde (6k) – ^1H NMR

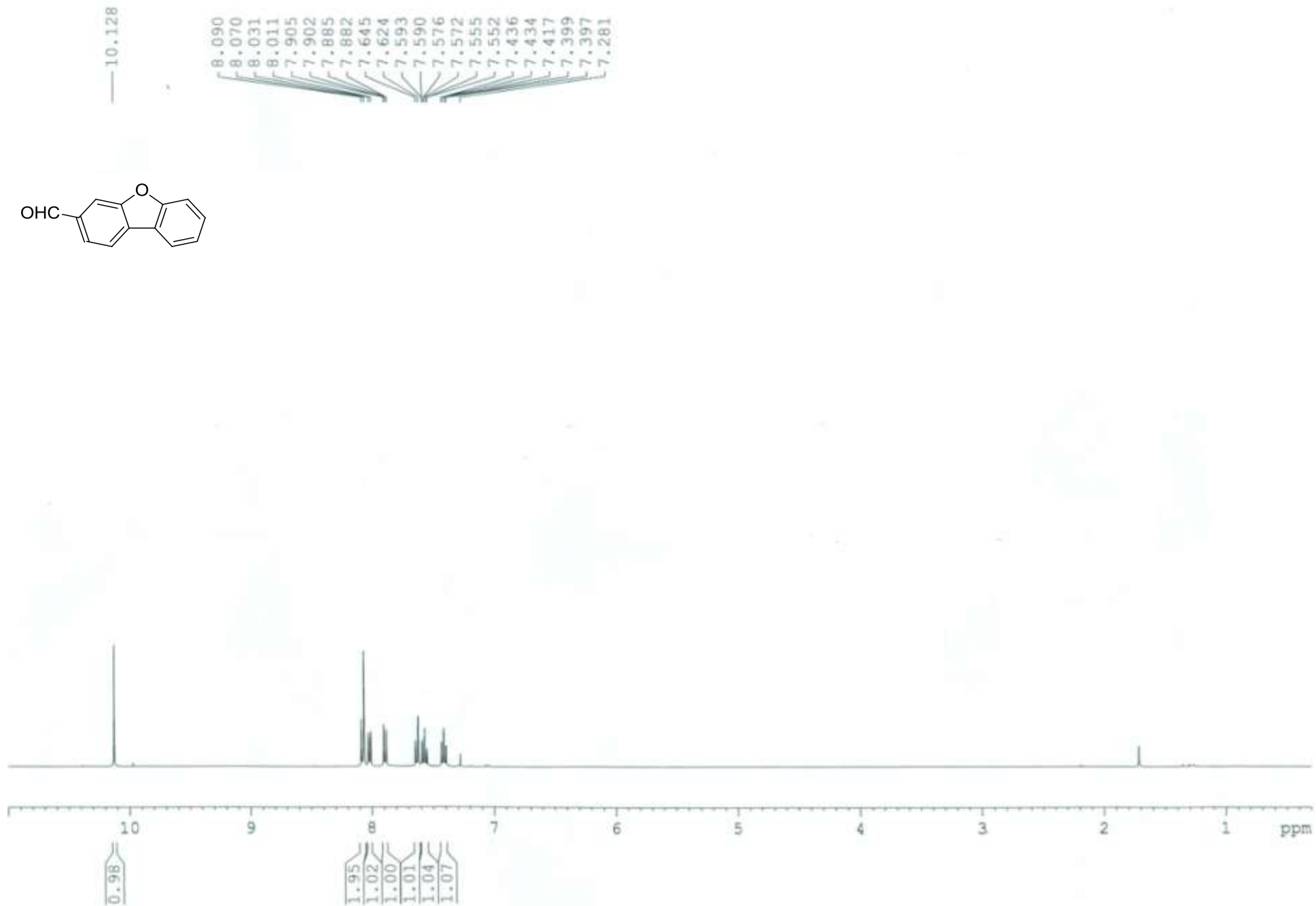


Dibenzofuran-1-carbaldehyde (6k) – ^{13}C NMR

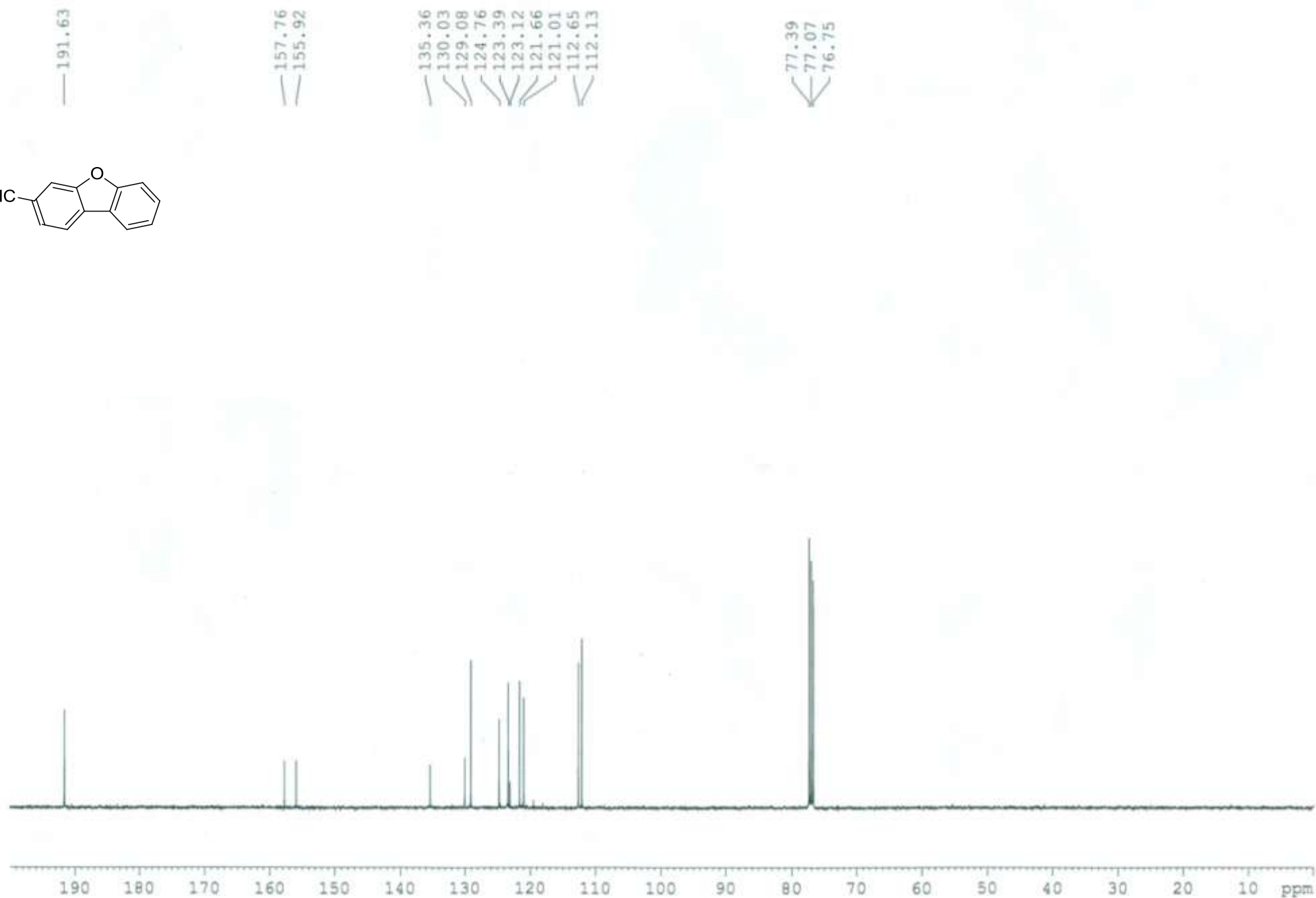
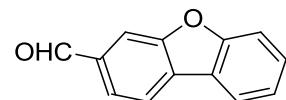


3-Dibenzofurancarboxaldehyde (6l) – ^1H NMR

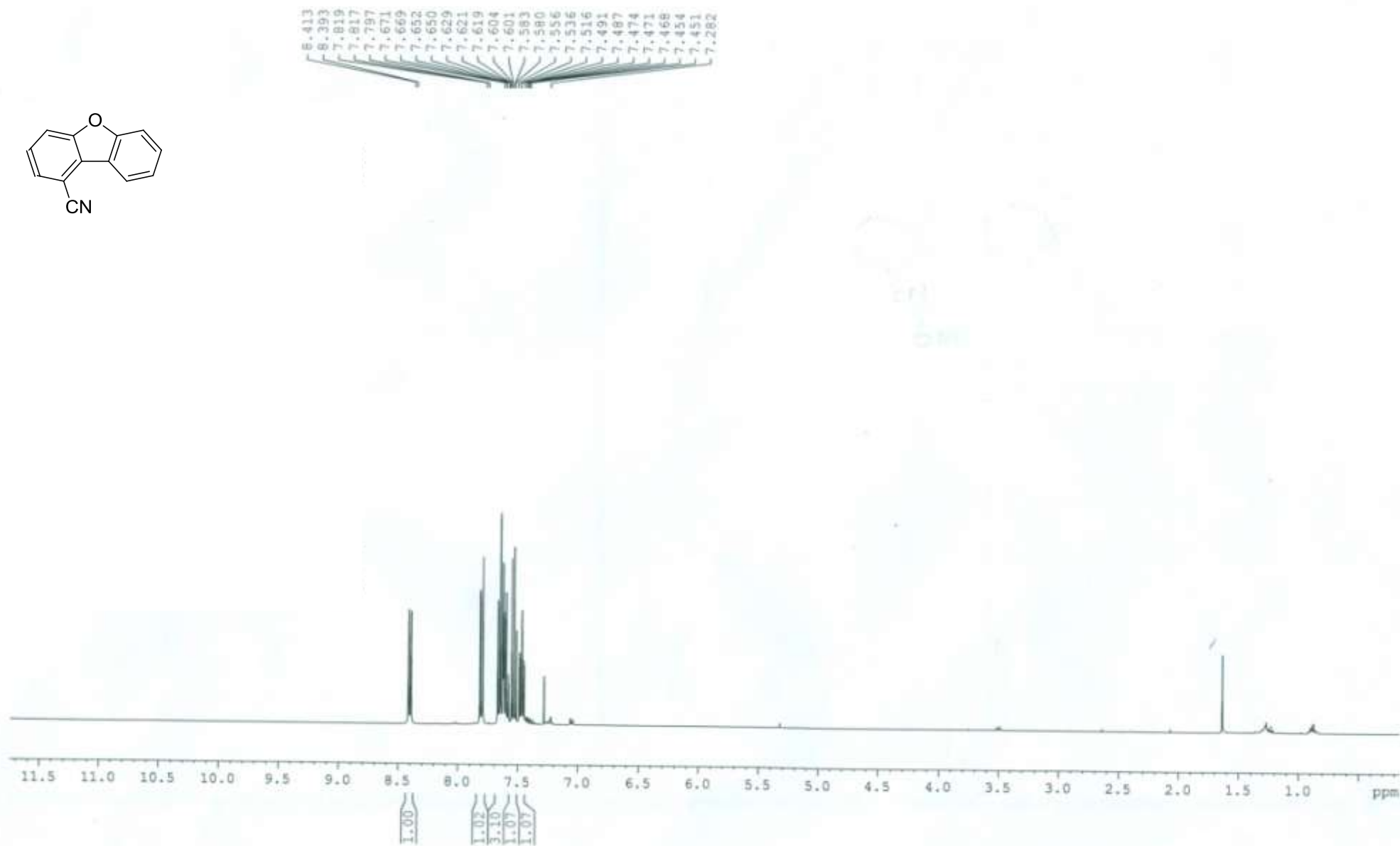
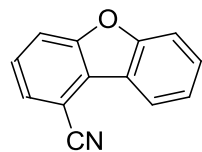
10.3.2015



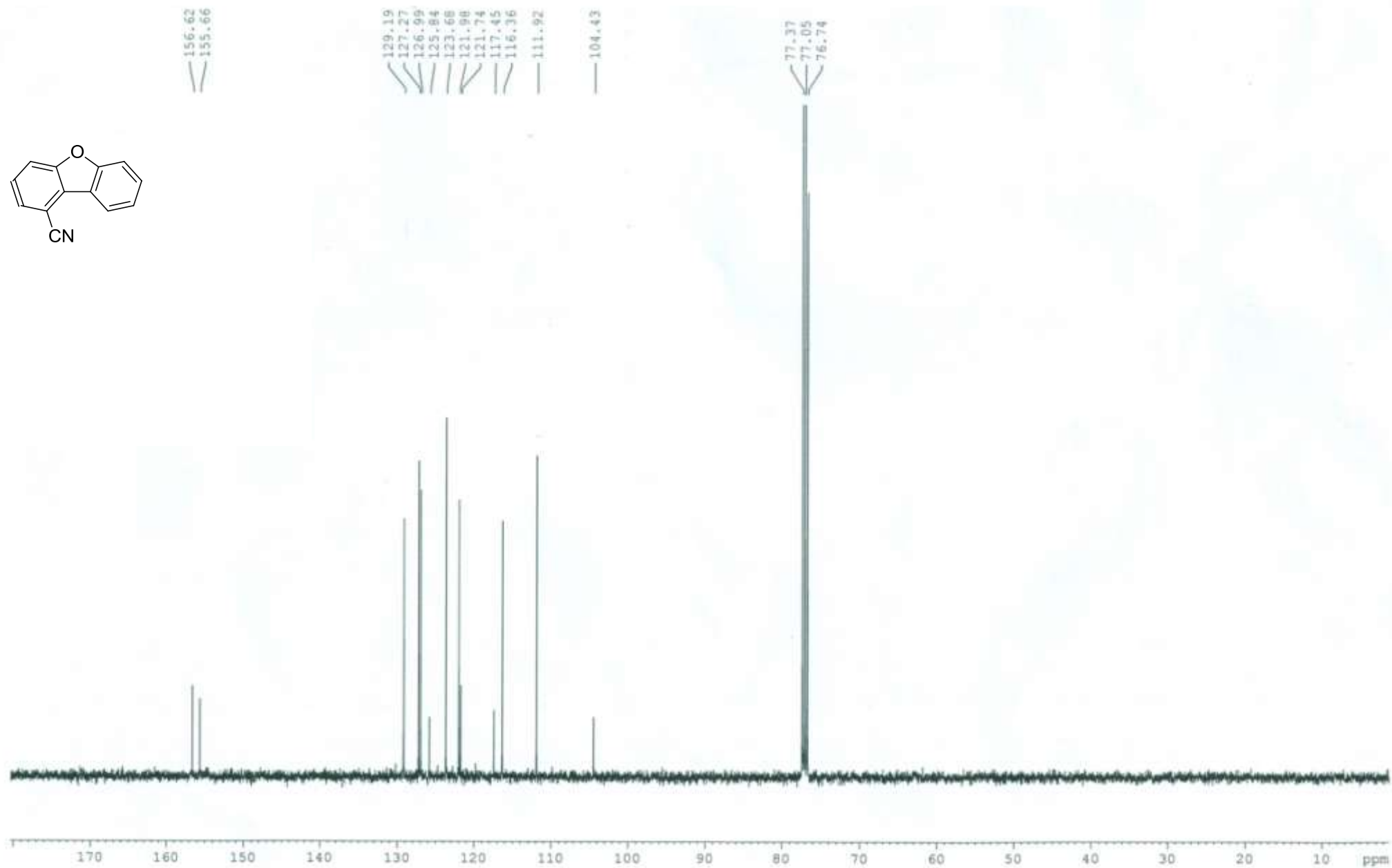
3-Dibenzofurancarboxaldehyde (6l) – ^{13}C NMR



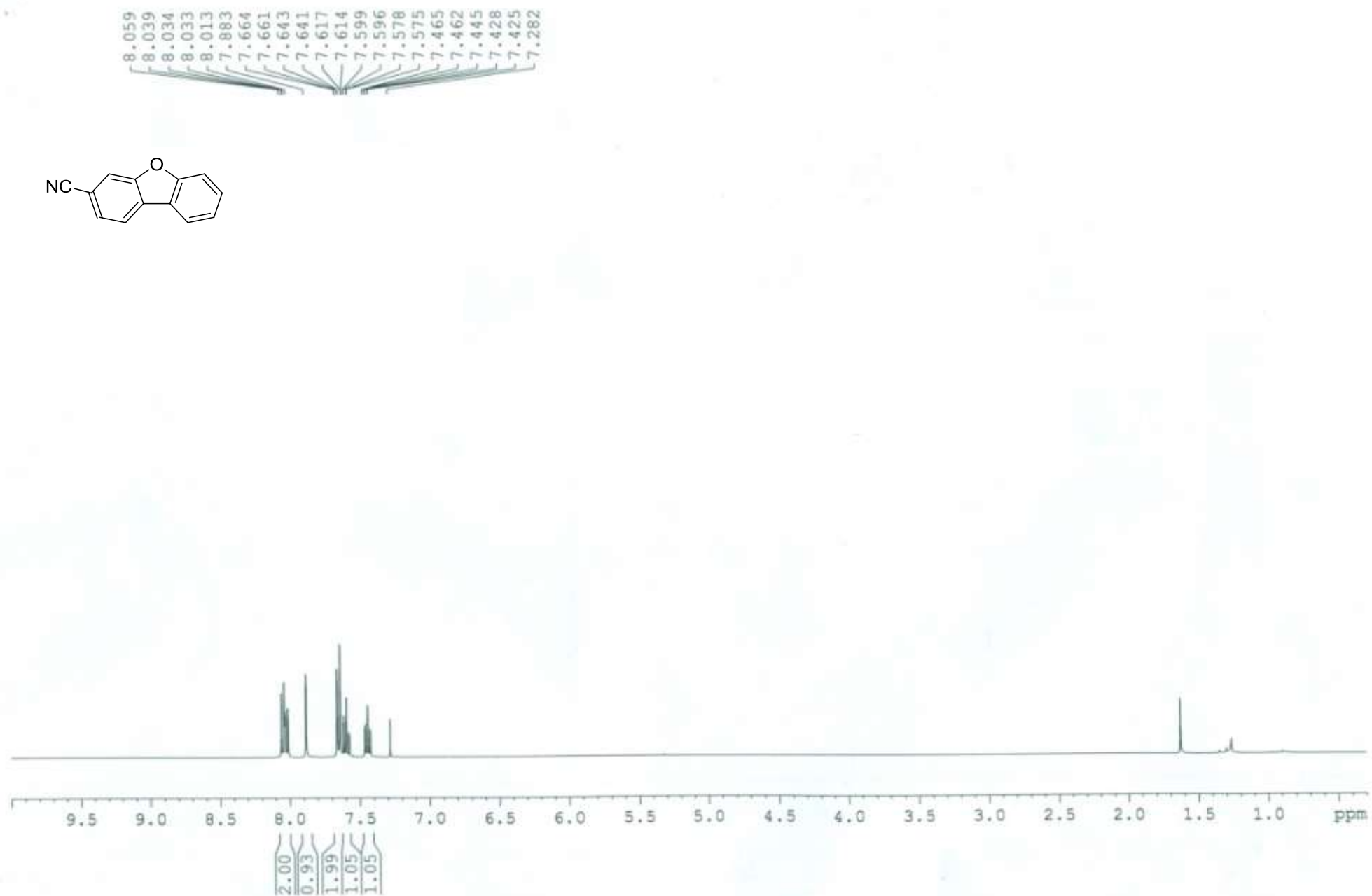
1-Dibenzofurancarbonitrile (6m) – ^1H NMR



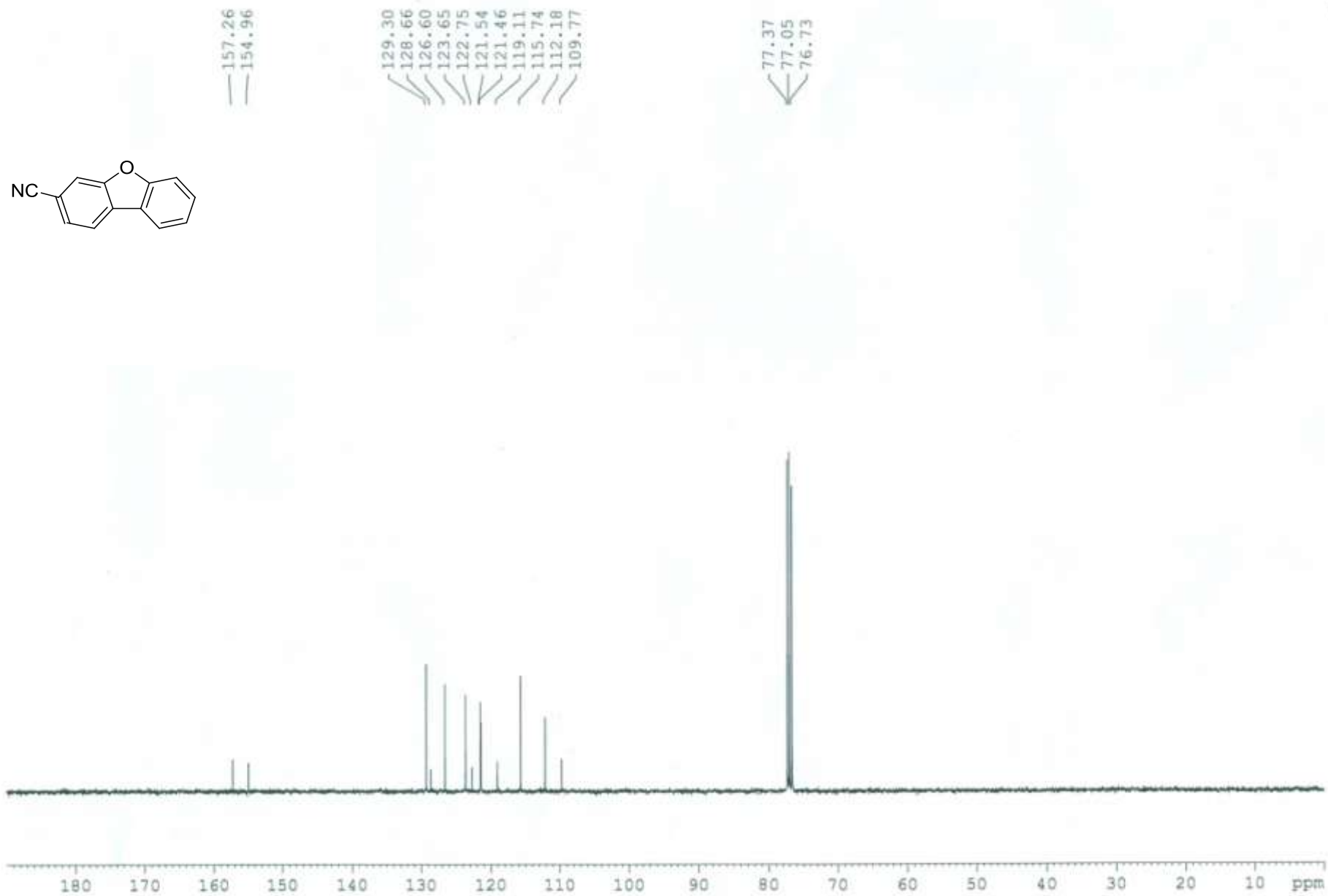
1-Dibenzofurancarbonitrile (6m) – ¹³C NMR



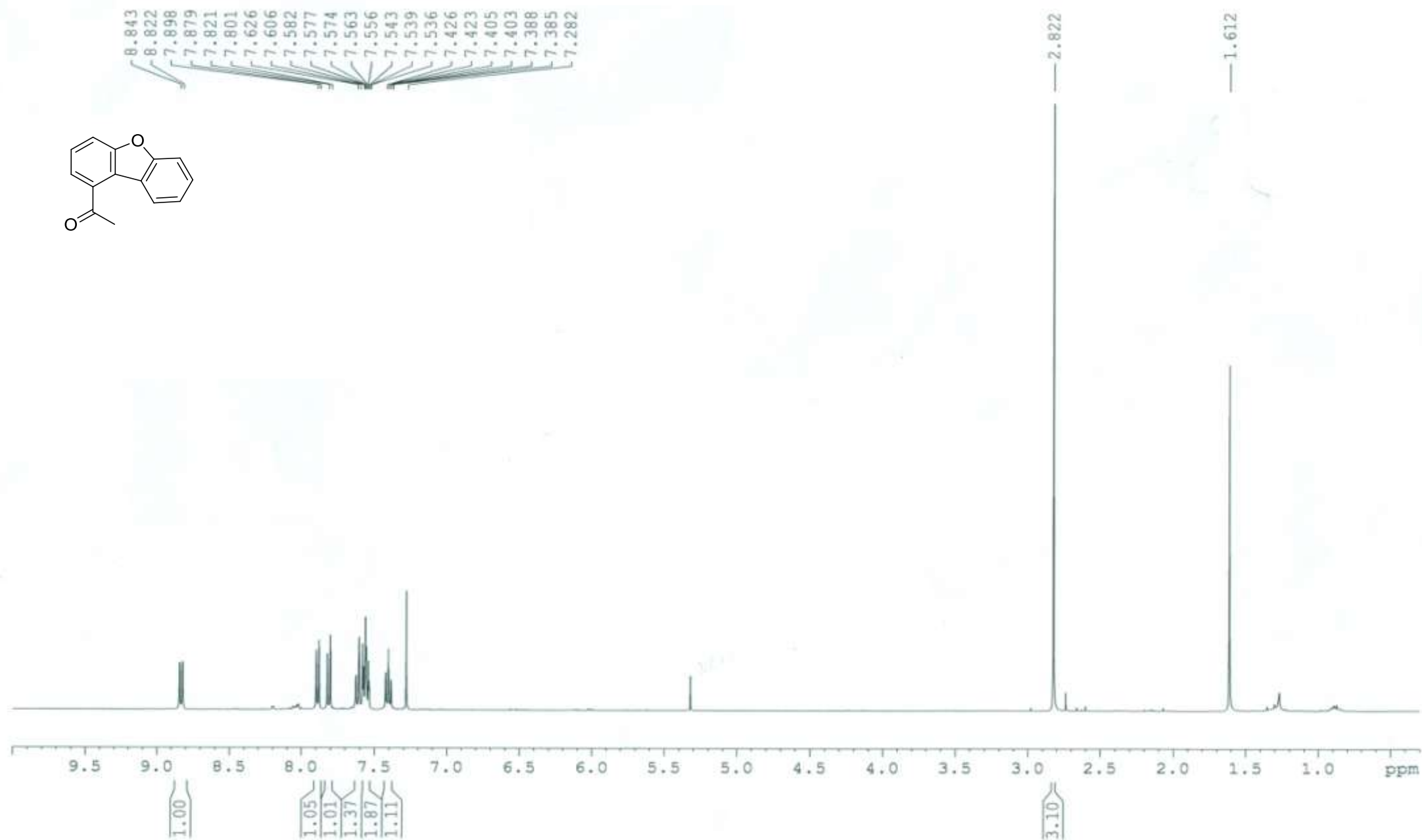
3-Cyanodibenzofuran (6n) – ^1H NMR



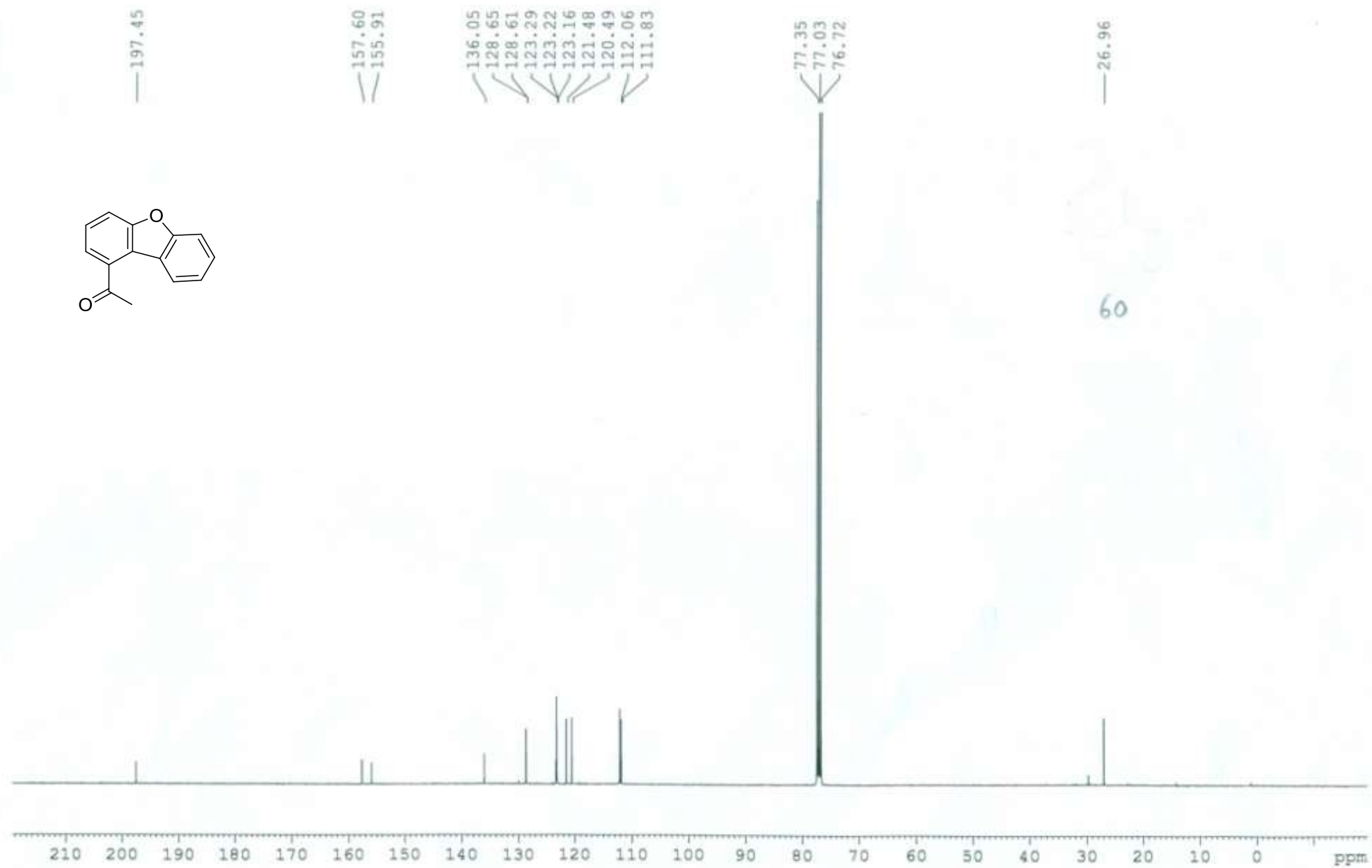
3-Cyanodibenzofuran (6n) – ^{13}C NMR



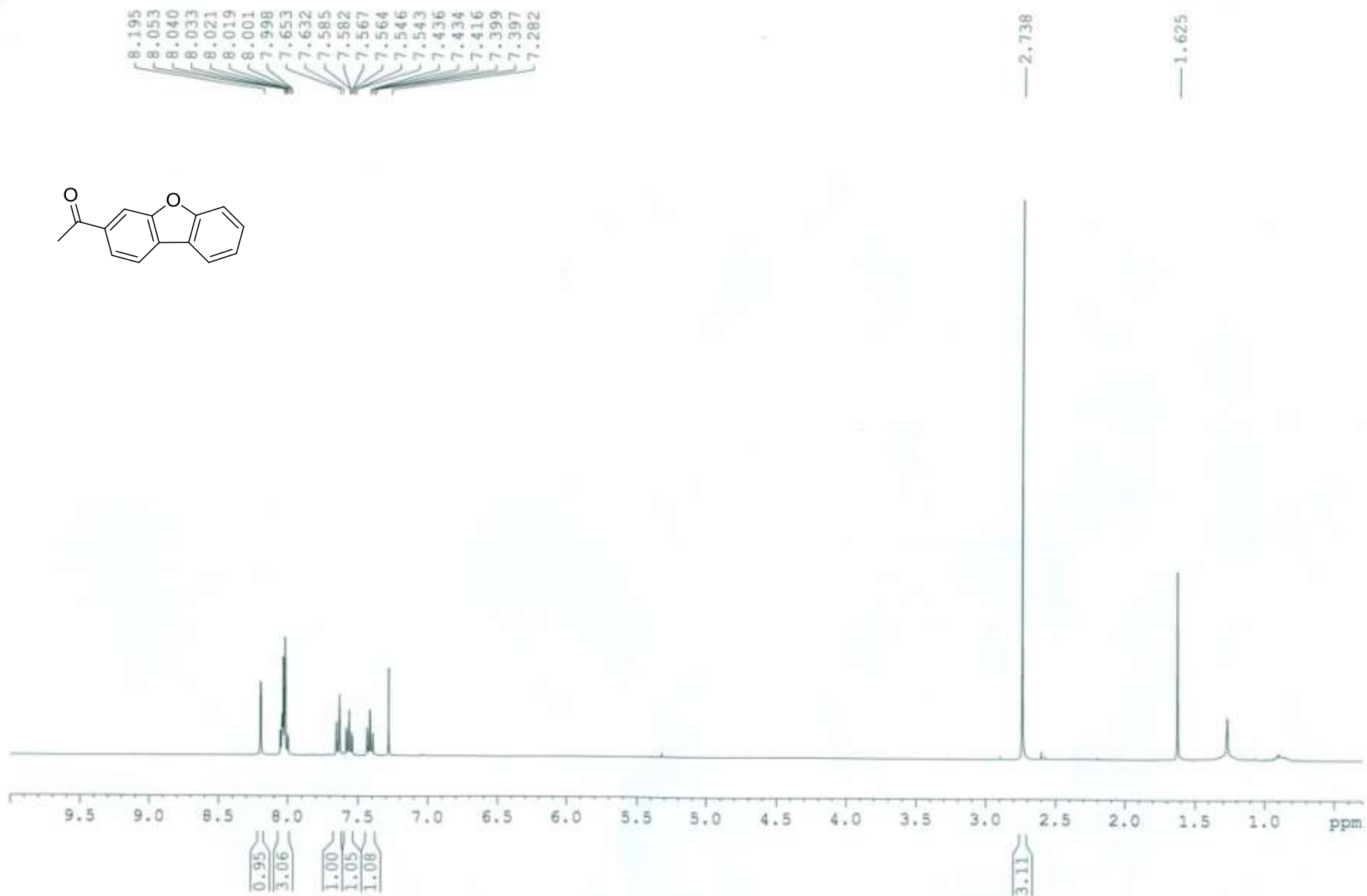
1-Acetyl dibenzofuran (6o) – ^1H NMR



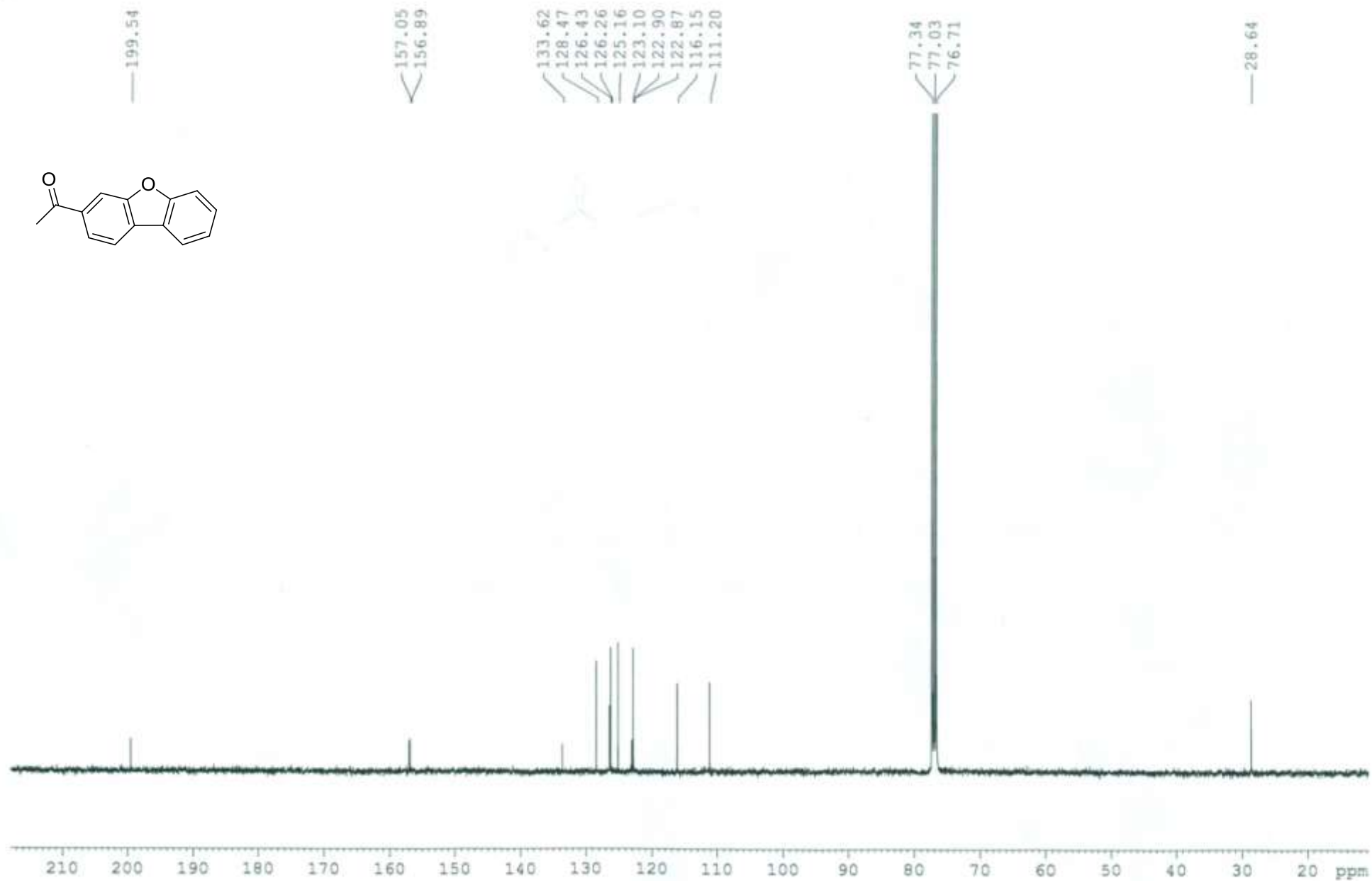
1-Acetyl dibenzofuran (6o) – ^{13}C NMR



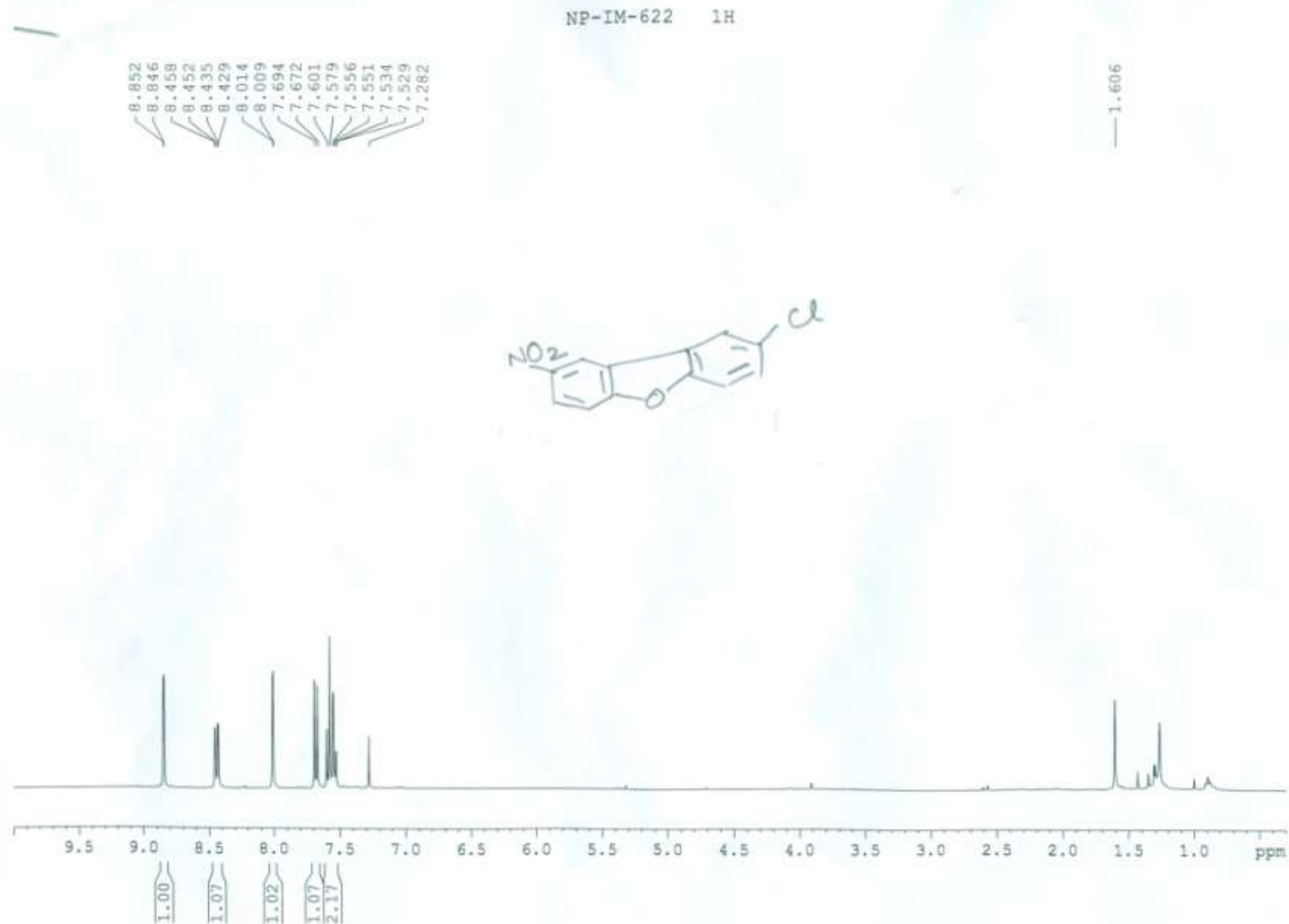
3-Acetyl dibenzofuran (6p) – ^1H NMR



3-Acetyl dibenzofuran (6p) – ^{13}C NMR



8-Chloro-2-nitrodibenzofuran (6q)-¹H NMR



8-Chloro-2-nitrodibenzofuran (6q)- ^{13}C NMR

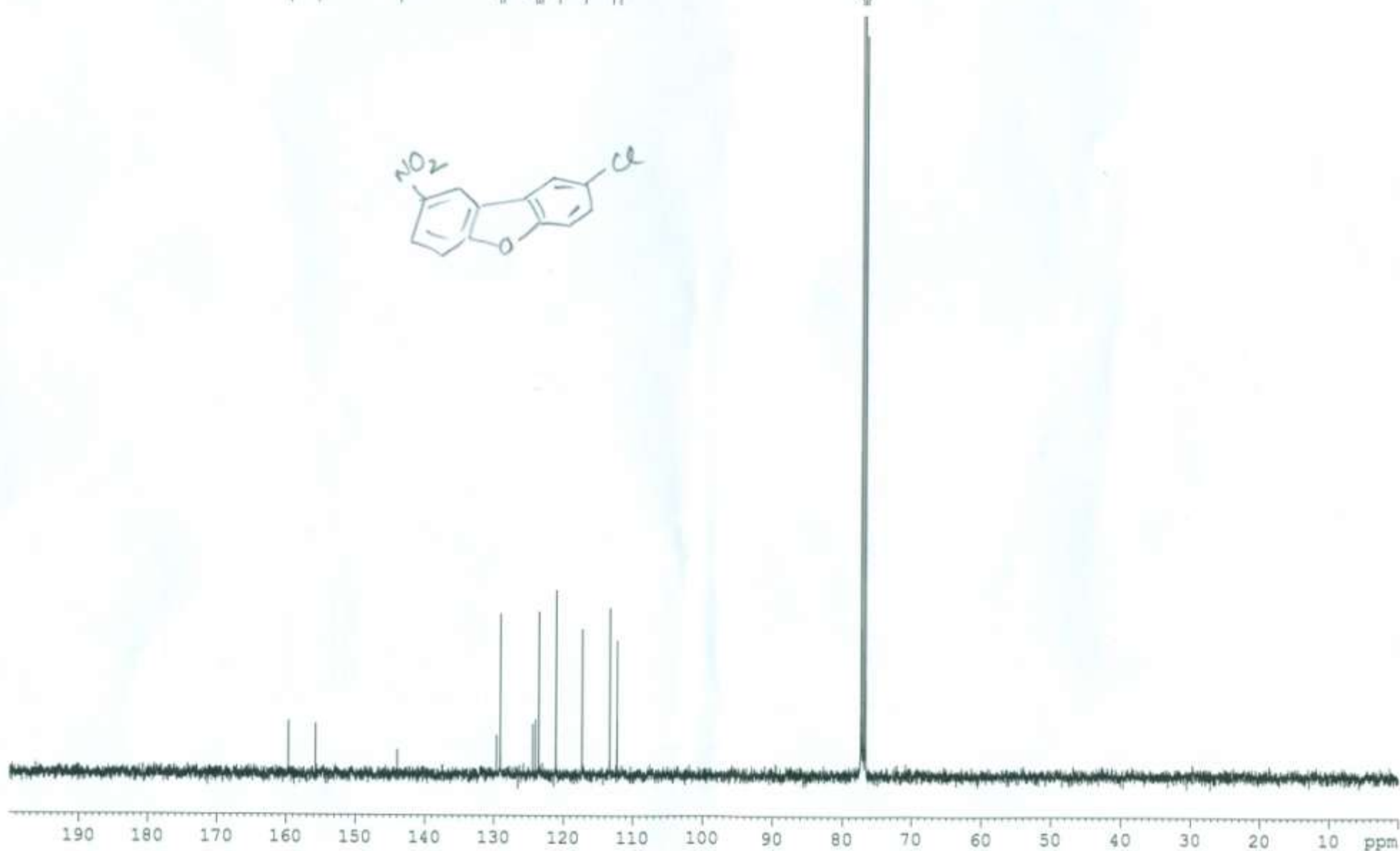
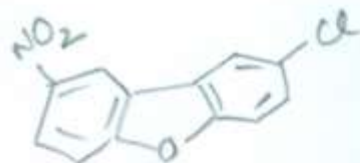
NP-IM-622 ^{13}C

159.64
155.73

144.00

129.62
129.09
124.49
124.09
123.65
121.15
117.37
113.36
112.32

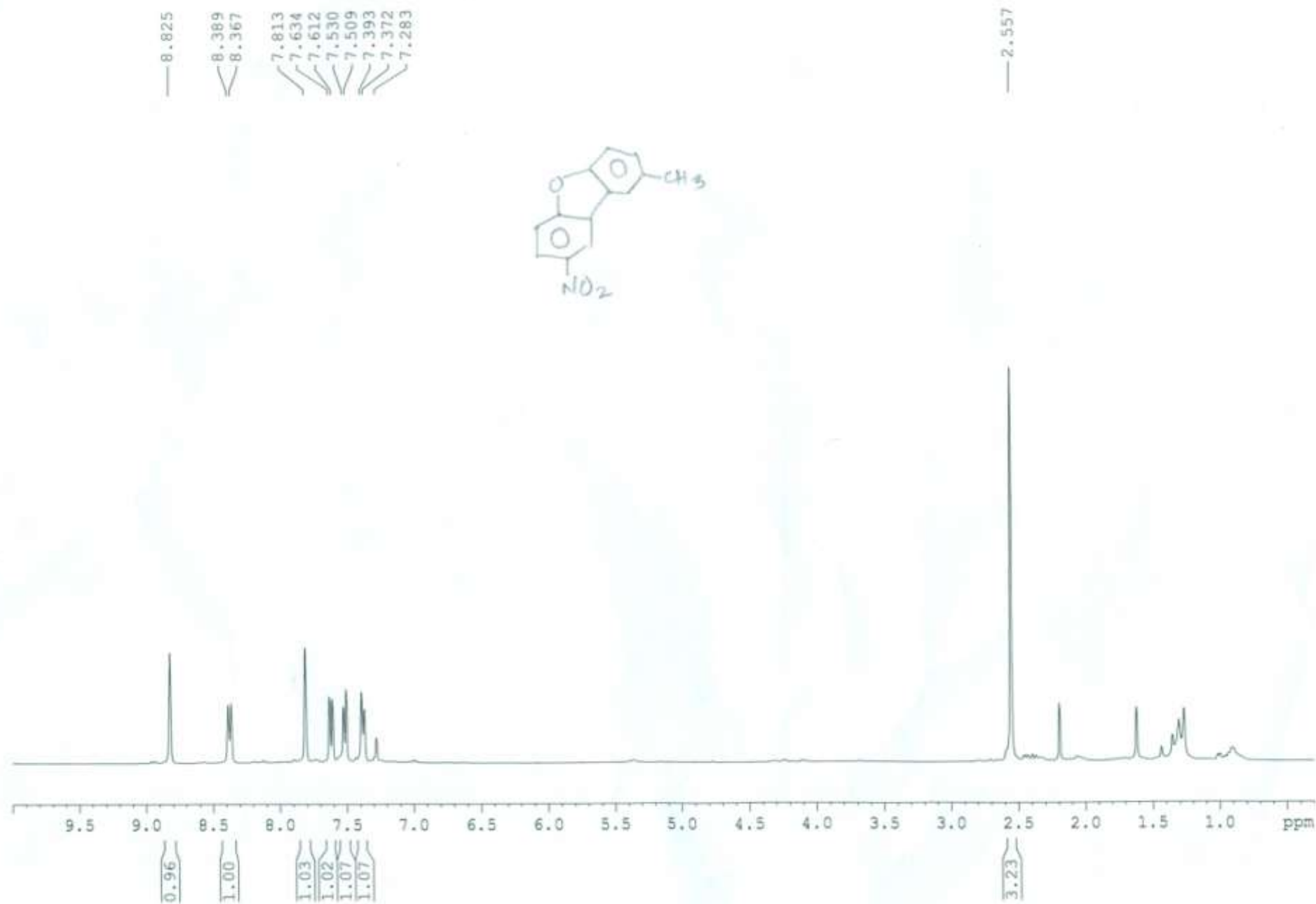
77.36
77.04
76.72



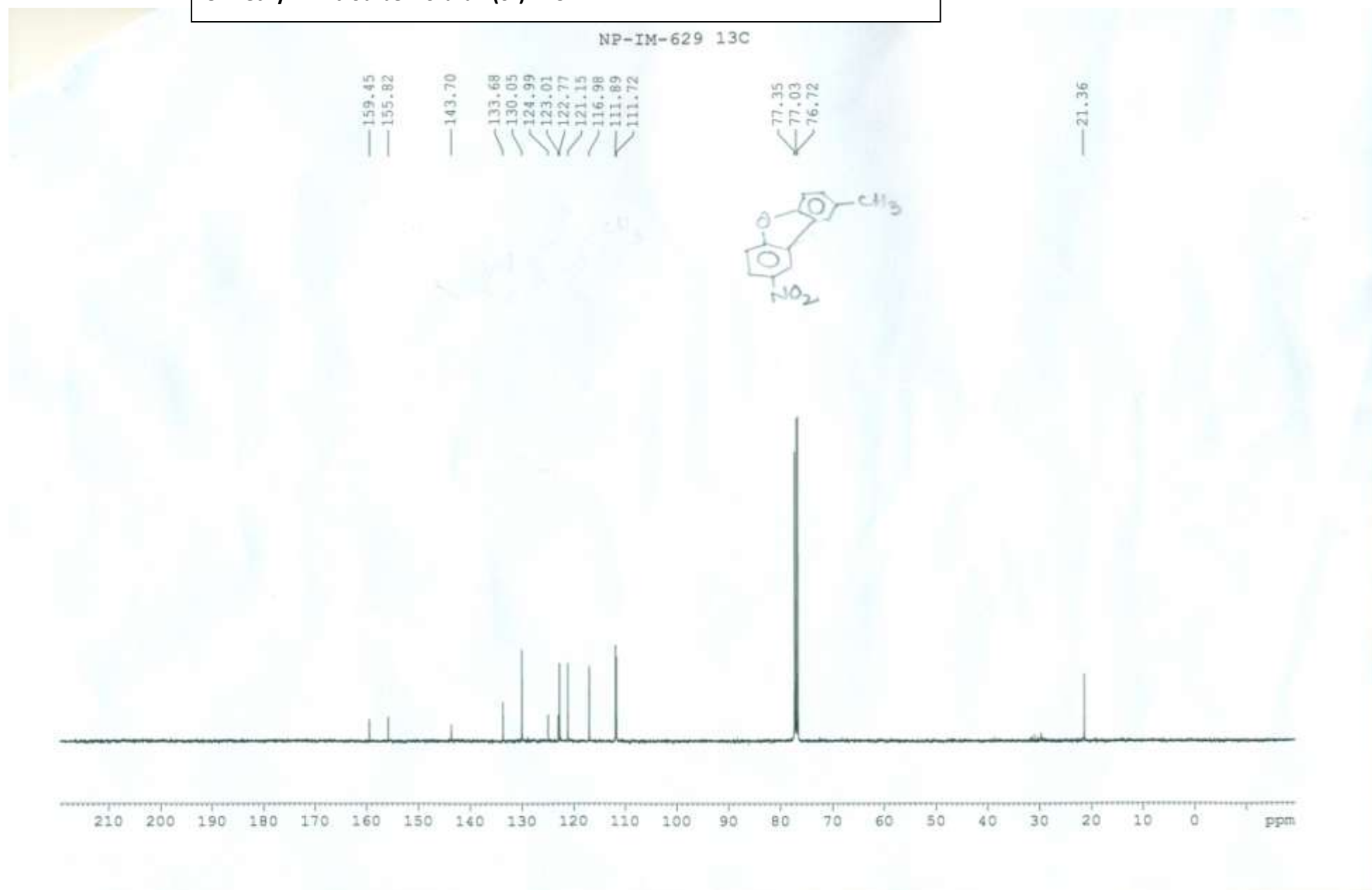
8-Methyl-2-nitrodibenzofuran (6r)-¹H NMR

NP-IM-629

1H

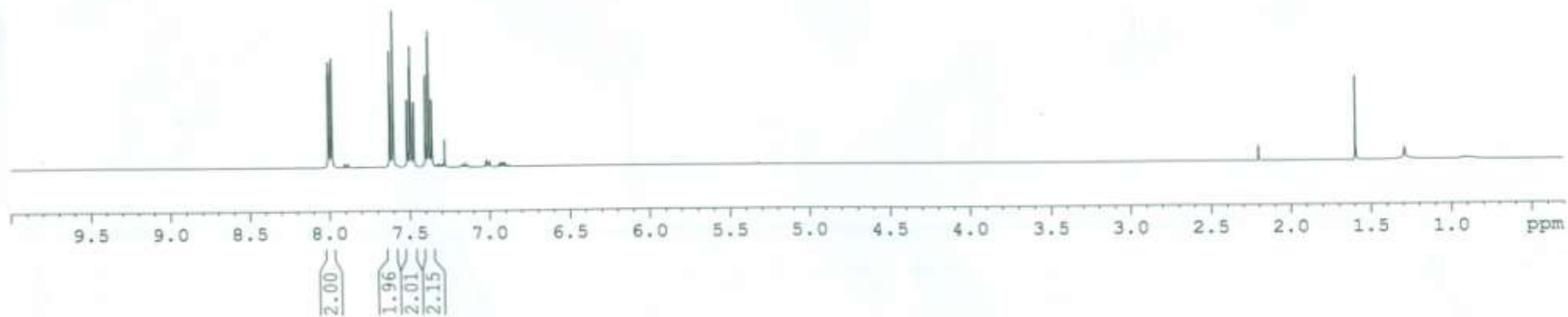
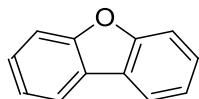


8-Methyl-2-nitrodibenzofuran (6r)- ^{13}C NMR



Dibenzofuran (6s) – ^1H NMR

8.005
7.986
7.984
7.624
7.603
7.516
7.513
7.498
7.495
7.477
7.474
7.401
7.399
7.382
7.381
7.364
7.362
7.282



Dibenzofuran (6s) – ^{13}C NMR

